WEST DEALER ISSUE
Pages 9-16

Croplife®

PUBLISHED EVERY MONDAY

WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

. 2 | Subscription Rates: $5 for 1 year, $9 for 2 years | AUGUST 29, 1955 | Acceptance under Section 34.64, P. L. and R. authorized. | No. 35

...rea Awarded ...9 Million Grant ...r Fertilizer

WASHINGTON—International Co-...eration Administration has an-...unced a $9 million authorization to ...rea for fertilizer. The source is ...rld wide, and the ending delivery ...e is next Jan. 31. Contract period ...ds Oct. 31.

Also announced is a $47,700 ICA ...thorization to Formosa for agricul-...ral pesticides. The source is the ...S. and possessions. Contract period ...ds Dec. 31 and ending delivery date ... Feb. 29. Procurement will be car-...d out through the Central Trust of ...hina.

...outhwest Potash ...o Expand Output

NEW YORK — Southwest Potash ...orp., subsidiary of the American ...etals Co., plans an expansion of one ...ird capacity at its potash mine and ...ill at Carlsbad, New Mexico. The ...st is expected to be $2.5 million. ...ompletion is scheduled for Febru-...y, 1956.

...lorida Phosphate ...utput Reaches ...wo Thirds of Normal

LAKELAND, FLA. — U.S. Phos-...horic Products Division of Tennessee ...orp. has reopened its phosphate ...lant following a wage and contract ...ettlement with the A.F.L. Chemical ...Workers Union. F. S. Royster Guano ...o. also has reached an agreement ...ith the union.

Phosphate output in this area is ...pproaching two-thirds of normal. ...trikes beginning June 1 shut down ...roduction.

Phosphate Industry Faces Good Future, Commerce Report Says

WASHINGTON, D.C.—With phosphatic fertilizer consumption on the rise in the U.S. the Bureau of Mines of the Department of the Interior reports optimistic information concerning the availability of basic supplies and the probable expansion of U.S. and world needs for fertilizer materials of all kinds, including phosphatic materials.

In a prevue of the phosphate rock chapter on mineral facts and problems, the Bureau of Mines reviews the growth of phosphatic fertilizer consumption in the U.S. in terms of available P_2O_5 from 1900 when 6½ lb. per capita was consumed. By 1940 this use rate had jumped to 13.8 lb. and then doubled between that time and 1950, when the Bureau of Mines estimates consumption at the annual per-capita level of 27.4 lb. In 1900 P_2O_5 was available at the rate of 2 lb. per acre; in 1940, this rate had advanced to 6 lb. and by 1950, this use level was 12 lb. The bureau anticipates that this upward curve will continue but the degree of acceleration may level off somewhat.

That phosphate rock availability can meet the increasing per acre use needs as well as the expanding requirements of the farm community for soil fertility building materials is not doubted by the bureau. It says that reserves of phosphate rock are many times any expected demand. They say that mine productive capacity is also adequate and that it can be expanded to meet expected increased demands.

Those demands leave little doubt that the phosphatic phase of the fertilizer industry is built on a solid base. The bureau estimates that by 1960 demand will reach 4.8 million tons of P_2O_5 and by 1975 this demand will amount to not less than 8 million tons.

Consumption of phosphatic fertilizers has been undergoing a change in form in the first half of this century, the bureau notes. Seventy percent of phosphatic fertilizer is consumed in the form of ordinary superphosphate, but the larger part of the balance is in the form of triple superphosphate which has been manufactured continuously in the U.S. since 1907.

By 1947, however, the use of superphosphate started to level off but triple superphosphate continued its upward swing. Another aspect of phosphatic fertilizer introduced in recent years is the newcomer—

(Continued on page 20)

Agronomists Hear About Atomic Energy Radiation, Weed Control

DAVIS, CAL. — Papers on weed control and the use of atomic radiation in agriculture were included in the 300 papers on crops and soils research presented at the annual meeting of the American Society of Agronomy at the University of California here Aug. 15-19. Attendance at the meeting exceeded 2,000, representing nearly all of the U.S. and 43 foreign countries.

In discussing the use of atomic energy irradiation as a useful tool in the development of agricultural crops that will be resistant to plant diseases, Dr. W. M. Myers, head of the department of agronomy at the University of Minnesota described the technique involved in the discovery of oat varieties and wheat varieties resistant to stem rust. Plants from the Ajax and Clintafe oat varieties were discovered to be resistant to both Races 7 and 8 stem rust disease.

Dr. Myers reported that both thermal neutron and X-ray irradiation were used, each giving about the same results. The plants tested were inoculated with Race 7 and 8 diseases. Percentages of resistant lines found were low. Six plants out of 988 of the Ajax progeny tested were found to be resistant. While not stating definitely that the resistance was due to irradiation dosages, Dr. Myers did say that no factors other than irradiation were observed responsible for the resistant mutants.

E. R. Ausemus, K. J. Hsu and D. W. Sunderman of the University of Minnesota agronomy staff reported on this type of work being done on Lee wheat, a spring variety of bread wheat, but where only one race of

(Continued on page 20)

...ndustry Sales Potential Lies ...n Increasing Efficiency of ...Highest Producing Farmers

By JOHN CIPPERLY
Croplife Washington Correspondent

— SPECIAL REPORT —

WASHINGTON—The two million U.S. farmers who produce 88% of agricultural commodities going into commercial markets (cited recently by Don Paarlberg, top U.S. Department of Agriculture economic adviser, Croplife, page 1, Aug. 22) appear as the upper layer of the business cake for the plant food industry.

Examination of available statistical data tends to confirm that conclusion, but also leads to some substantial qualifications concerning the 3½ million farmers who produce the remaining 12% of the farm products going to market.

The publication of the Paarlberg statement led to an inquiry as to the relative efficiency of the top 2 million farmers when it came to the use of plant foods and economic poisons. For current purposes further discussion will be restricted to plant food use only, and subsequently detailed studies may be developed as to the use of pesticides.

To cover adequately the Paarlberg statement in relation to individual farm efficiency, it will be necessary to treat the subject regionally and cropwise. The first of these articles

(Continued on page 21)

National Potash Establishes Sales, Executive Offices

NEW YORK—Executive and sales offices have been established by the National Potash Co. at 205 E. 42nd St. here. The telephone number of the new firm is LExington 2-1871.

The company is owned jointly by the Freeport Sulphur Co. and the Pittsburgh Consolidation Coal Co. and will operate a $19 million potash project now being built at Carlsbad, N.M.

Richard C. Wells is president, William B. Porterfield, Jr., vice president and sales manager and Thomas G. Ferguson is vice president in charge of operations.

Davison to Take Over Pringle Co. Manufacturing

BALTIMORE, MD.—An agreement between Davison Chemical Co., division of W. R. Grace & Co. and A. F. Pringle & Co., Charleston, S.C., has been made whereby Davison will take over manufacturing and sales responsibilities of the Pringle plant.

A Davison spokesman indicated that this development does not constitute a sale of property, but rather, that Davison will now operate the manufacturing facilities and sales of the products.

Fertilizers will be sold under the Pringle name as before, and Davison will also manufacture its own "Davco" brand of plant food at the Charleston location.

The new operation will be under the direct supervision of William Watmough, Davison vice president. L. L. Oliveros of the Pringle firm will continue to be responsible for operation of the Charleston plant.

The Pringle company expects to discontinue manufacturing operations on Dec. 1.

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C. A. Graft

Alabama By-Products Appoints New Sales Engineer

BIRMINGHAM, ALA.—C. A. Graft has been appointed as service and sales engineer by the Alabama By-Products Corp., according to an announcement by P. H. Neal, president.

Mr. Graft will devote his entire time to servicing and selling various nitrogen products of the company, including sulphate of ammonia produced by ABC at Tarrant, Ala., and anhydrous ammonia and solutions produced at the nearby plant of Ketona Chemical Corp. The latter is owned jointly by ABC, and Hercules Powder Co., Wilmington, Del.

A graduate of Michigan State College, Mr. Graft specialized in agriculture and agronomy and also participated in athletic activities. He was formerly associated with the Nitrogen Division of Allied Chemical & Dye Corp. where for the past several years he was eastern sales and service representative on nitrogen materials. Since joining ABC, Mr. Graft has moved from Westport, Conn., to Mountain Brook, Ala.

Western States Chemical Names General Manager

NICHOLS, CAL.—Appointment of W. L. Dixon, Jr., as general manager of the Western States Chemical Corp. has been announced by the firm's board of directors.

Mr. Dixon will head a new Western States fertilizer plant, now under construction at Nichols, Cal. The plant will have a capacity of 200 tons per day of pelleted complete fertilizers, when it begins operations early in 1956.

E. W. Rowbotham will serve as the Nichols plant manager. Products will be marketed throughout California by distributors to be selected.

DR. W. B. TISDALE RETIRES

GAINESVILLE, FLA.—Dr. W. B. Tisdale, head of the plant pathology department in the University of Florida Agricultural Experiment Station, retired Aug. 1.

NPFI Presents Speakers Over 900 Stations

WASHINGTON—Four nationally-known authorities in the field of agriculture will be guest speakers on the tenth in the National Plant Food Institute's recorded Farm Radio News Service to be used by more than 900 radio stations within the next three weeks, the NPFI has announced.

The speakers and their subjects are: Oris V. Wells, administrator, Agricultural Marketing Service, USDA, "Better Foods and Better Living"; Dr. Byron T. Shaw, administrator, Agricultural Research Service, USDA, "Research—Money in the Bank"; D. A. Williams, administrator, Soil Conservation Service, USDA, "Soil and Water Conservation," and Dr. Robert E. Wagner, research agronomist, Agricultural Research Service, USDA, "Pastures—Challenge Across the Country."

The recorded service is directed to farm radio audiences, with emphasis on the importance of maintaining, replenishing and increasing the fertility of the soil.

Since its establishment in 1952, the demand for recordings has grown from 304 stations to more than 900 stations, NPFI says. The service consists of four 3-minute talks by nationally-known leaders in the field of agriculture. Recordings are sent to stations only on request.

In charge of the Farm Radio News Service series is Louis H. Wilson, secretary and director of information of the institute.

Bernard M. Machen Named to New Post With Lion Oil Co.

EL DORADO, ARK.—Bernard M. Machen has been named assistant general manager of chemical sales for Lion Oil Company, according to an announcement by A. F. Reed, company vice president. Machen, who will have his headquarters in El Dorado, has been district chemical sales manager at Montgomery, Ala., since June, 1949.

A native of Albertville, Ala., Mr. Machen received his formal education at Howard College (Birmingham, Ala.) and Alabama Polytech Institute. He came to Lion in 1948 as sales representative with five years' experience in the fertilizer field. He had served four years in the U.S. Air Force from which he was separated as a captain.

First Half Sales In Iowa Decline

DES MOINES—Fertilizer sales in Iowa during the first half of 1955 totaled 427,861 tons, according to a report by Clyde Spry, state secretary of agriculture. The total included 303,936 tons of mixed fertilizer and 123,925 tons of materials. Sales for the first half of 1954 in Iowa totaled 485,223 tons.

Lea S. Hitchner

W. W. Allen

ON NAC ASSN. FALL PROGRAM—Prominent in directing the affairs of t National Agricultural Chemicals Assn. and scheduled to appear on its 22 annual meeting at the Essex and Sussex Hotel, Spring Lake, N.J., are Lea Hitchner, executive secretary and treasurer and W. W. Allen, Dow Chemic Co., president of the association. The fall meeting begins Wednesday, Sept. and continues through Friday, Sept. 9.

Chairman of the program committee, responsible for the selection speakers, is M. R. Budd, Hercules Powder Co., Wilmington, Del. Plans f next week's sessions include the talks by Warren Moyer, president, Chipm Chemical Co., Bound Brook, N.J.; H. E. Luedicke, editor, New York Journ of Commerce; Arthur W. Mohr, president, California Spray-Chemical Cor Richmond, Cal.; Dr. John T. Thurston, director, Stamford Research Labor tories, American Cyanamid Co., Stamford, Conn.; Prof. G. E. Lehker, Purd University, Lafayette, Ind., and Dr. S. W. Simmons, U.S. Public Health Servic Atlanta, Ga. A panel discussion on the Miller Amendment will include Wint B. Rankin, assistant to the Commissioner of U.S. Food and Drug Adm., Was ington, D.C.; Dr. W. G. Reed, head, Pesticide Regulations Section, USDA, a Dr. Charles E. Palm, head of the Dept. of Entomology, Cornell Universit Ithaca, N.Y.

Members of the program committee, headed by Mr. Budd, include Doug G. Bennett, Phelps Dodge Refining Co., New York; Silas Besthoff, Faesy Besthoff, New York; J. L. Damon, General Chemical Div., Allied Chemical Dye Corp., New York; L. G. Gemmell, Geigy Chemical Corp., New Yor Howard J. Grady, California Spray-Chemical Corp., Washington, D.C.; Char L. Hovey, Eastern States Farmers' Exchange, Inc., West Springfield, Mas Dr. Alfred Weed, Olin Mathieson Chemical Corp., New York, and Way Yoder, American Cyanamid Co., New York.

An election will be held for members of the NAC Board of Direct on Wednesday, Sept. 7.

Richard M. Young, Jr.

ULTRA APPOINTMENT — Ultra Chemical Works, Inc., has announced the appointment of Richard M. Young, Jr., to the position of assistant sales manager. In his new post Mr. Young will be responsible for the sales activities of Ultra's field representatives. Mr. Young joined Ultra in 1952 as a sales representative for the New York Metropolitan area. As assistant sales manager he will operate out of Ultra's Paterson, N.J., office.

SOILS LABORATORY

PERRY, OKLA.—A new soil testing laboratory for Noble County, Okla., is being erected at the courthouse here. It will replace a laboratory in the Post Office Bldg.

Carbide Corp. to Build Skyscraper As New Home Offic

NEW YORK — Union Carbide Carbon Corp., parent organization Carbide & Carbon Chemicals C has announced plans to build a n 41-story home office on Park Av New York. Total cost of the n building is about $40 million. T firm will occupy the entire structu with exception of the ground floor.

The skyscraper will occupy a entire block between 47th and 48t Streets. It is expected to be read for occupancy sometime in 195

Carbide & Carbon Chemicals manufactures and markets the C line of herbicides and other agric tural chemicals. The company is pr ently located at 30 E. 42nd St. in building which bears the compan name.

FUNDS AVAILABLE

MANHATTAN, KANSAS — L than one third of the cost-shar funds on conservation practices 1955 had been obligated to Kan farmers up to July 1, the state A office in Manhattan has reported. the $6,425,000 in agricultural c servation program (ACP) funds located to Kansas for this year, $ 061,350 had been obligated dur the first six months. Of that amou $1,155,000 was completed performan and $906,350 was outstanding in pr approvals. "This situation makes possible to undertake a greatly panded conservation program the mainder of this year," Ben C. Kie state ASC chairman, said.

Basin Farmer Hits 103 Bu. Wheat Yield

QUINCY, WASH.—A farmer in block 74 of the Columbia Basin Project near here had a yield of 103 bu. wheat an acre on 16 acres, F. L. Huffman, manager of the Quincy Farmers Elevator Co., reported last week.

Mr. Huffman said wheat grown under irrigation in the Quincy Valley this year is averaging 70 to 80 bu. an acre. Two farmers have 95 bu. yields and one 98, he reported.

The Columbia Basin project farmers jumped their acreage in wheat from 11,000 acres last year to more than 24,000 this year.

"Dry land wheat isn't worth talking about," Mr. Huffman said. Bad weather conditions have cut the spring wheat crop from four to nine bushels to the acre, and winter wheat is yielding only nine to fifteen, he said.

Both dry and irrigated wheat is club variety.

Spruce Project

OGDEN, UT of more than 3 as-fir forests i control epidemi (Croplife, page successful, Ree of the intermou experiment sta week.

The sprayin cently on 133, Yellowstone N Gallatan For acres of the Forest.

The control taken by the U.S. forest servi with the coop state departme vate landowner of the project w insect laborato

At the same nounced that a of aerial and gr insect epidemic in the northern gion by his sta

The surveys the insect labor two months an state and fede eastern Washin Montana and th of South Dakot

The surveys by the experi provisions of trol act of 19 together curr

Hot, Dry W Improves C Crop in M

MEMPHIS— ton crop occup Mid-South agric

A week of h improved condi cotton in Miss tural Extension

The hot suns boll rot in rank ening bolls rapi extension cotto

Farmers are to permit the ture. However, ly rank cotton mediately, espe ers begin, ext vise.

Cotton pickin in some South during the we picking is under Boll weevils ar turing cotton a lent green fields Bennett, Missis mologist.

However, i spokesmen sa and bollworm cause trouble.

Wet weather a lush growth with the result become hard Agricultural Ex The Extensio infestations "se Feed grain, s are in "excelle good yields in p

SEE Page 9 . . .

Spruce Budworm Aerial Spraying Project in Montana Called Successful

OGDEN, UTAH — Aerial spraying of more than 300,000 acres of Douglas-fir forests in western Montana to control epidemics of spruce budworm (Croplife, page 19, Aug. 15) has been successful, Reed W. Bailey, director of the intermountain forest and range experiment station here said last week.

The spraying was completed recently on 133,000 acres in parts of Yellowstone National Park and the Gallatan Forest and on 169,000 acres of the Bitterroot National Forest.

The control program was undertaken by the regional office of the U.S. forest service at Missoula, Mont., with the cooperation of Montana state department of forestry and private landowners. Technical direction of the project was given by the forest insect laboratory at Missoula.

At the same time Mr. Bailey announced that an intensive program of aerial and ground surveys of forest insect epidemic outbreaks was begun in the northern Rocky Mountain region by his station.

The surveys will be conducted by the insect laboratory during the next two months and will cover private, state and federal forests in northeastern Washington, northern Idaho, Montana and the northwestern parts of South Dakota and Wyoming.

The surveys are made each year by the experiment station under provisions of the forest pest control act of 1947. They will bring together current information on new and existing outbreaks on approximately 39,000,000 acres of forest land in the northern Rockies.

Approximately 300 hours of flying will be done by laboratory technicians to map areas of visible current insect infestations of a number of tree-killing bark beetle species and several kinds of tree-defoliating insects. Reports of the survey will be prepared about Nov. 1 for distribution to forest land owners and managing agencies whose lands are found to be currently infested, Mr. Bailey said.

Hot, Dry Weather Improves Cotton Crop in Mid-South

MEMPHIS—Progress of the cotton crop occupies the center of the Mid-South agricultural stage.

A week of hot, dry weather has improved conditions in much rank cotton in Mississippi, the Agricultural Extension Service reported.

The hot sunshine has stopped the boll rot in rank cotton and is toughening bolls rapidly, said T. M. Waller, extension cotton specialist.

Farmers are delaying defoliation to permit the bolls to fully mature. However, those with extremely rank cotton should defoliate immediately, especially if local showers begin, extension officials advise.

Cotton picking will be in full swing in some South Mississippi counties during the week ahead and some picking is under way in other areas. Boll weevils are leaving older maturing cotton and moving to succulent green fields, according to A. G. Bennett, Mississippi extension entomologist.

However, in Arkansas, farm spokesmen said that boll weevils and bollworms are beginning to cause trouble.

Wet weather in Arkansas produced a lush growth of leaves and stalks, with the result hat the pests have become hard to control, said the Agricultural Extension Service.

The Extension Service called the infestations "serious" in some areas.

Feed grain, silage and hay crops are in "excellent" condition, with good yields in prospect.

Southern Weed Conference Scheduled At New Orleans

MEMPHIS — The ninth annual meeting of the Southern Weed Conference will be held at New Orleans Jan. 16-18, it was announced recently by Glenn C. Klingman, president. All sessions will be held at Hotel Jung.

Dr. Klingman who is a professor of agronomy at North Carolina State College, at Raleigh, said the purpose of the meeting is to bring together all phases of weed control research and education in the southern part of the U.S.

Attending will be representatives from state experiment stations, U.S. Department of Agriculture extension services, the agricultural chemical and farm equipment industry, vocational agriculture and the farming industry.

Weed control in pastures, field crops, horticulture and other phases of agriculture will be discussed by leaders in this field from all southern states.

Dr. Mark Weed, E. I. du Pont de Nemours & Co., c/o Botany Department, Louisiana State University, Baton Rouge, is the program committee chairman. Those interested in the program should contact Dr. Weed.

Officers for the 1956 conference include Dr. W. B. Albert, South Carolina Agricultural Experiment Station, Clemson, S.C., vice president and Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, secretary-treasurer.

Chemical Salesmen Plan Fall New York Meeting

NEW YORK — The fifth annual sales clinic sponsored by the Salesmen's Association of the American Chemical Industry will be held at the Roosevelt Hotel, New York, Oct. 24, in conjunction with the Annual Dinner of the association. General theme of the clinic will be "Effective Selling of Chemicals."

The morning session will be devoted to talks by four speakers on the chemical industry and sales technics, and the afternoon session will be devoted to four panel sessions, running concurrently, covering subjects that were discussed in the morning. The morning speakers will be present at the panel sessions, a good portion of which will be devoted to question and answer periods.

CHEMICAL EXPANSION

AUSTIN, TEXAS—From 1947 to 1954 the number of chemical plants have increased on the Gulf Coast by 25%.

C. L. McDaniel

F. H. Courtenay

SAFETY SPEAKERS—Shown above are two of the industry men who will appear on the program of the Fertilizer Safety Section of the National Safety Council when it holds its annual meeting Oct. 17-18 at the La Salle Hotel, Chicago. C. L. McDaniel, technical service supervisor, Chemical Sales Division, Lion Oil Co., El Dorado, Ark., will discuss the topic, "Liquid Nitrogen." His talk will be part of an Oct. 18 panel. F. H. Courtenay, secretary, Federal Chemical Co., Louisville, will talk about fire protection at the Oct. 18 session. Mr. Courtenay, after World War II service, was graduated from Harvard University in 1949 and in January, 1950, joined Federal Chemical Co. He was in the production department at plants in Tennessee, Ohio and Indiana, and now is at the Louisville office.

Lansing, Mich. Plans Beetle Spray Program

LANSING, MICH.—A total of 240 acres of residential property infested with Japanese beetles at Lansing, Mich., will be sprayed with insecticides by airplane in early September.

The federal government will provide an airplane for the spraying and the city will furnish the insecticide. Dieldrin will be used in a fine granulated form.

The decision to spray was reached after several weeks of research by the Michigan Department of Agriculture. The scope of the infestation was determined by inspections and trapping for the destructive beetle.

A joint project of the city, state and federal governments, the city of Lansing will pay about $3,500. H. L. Bancroft, superintendent of parks for Lansing, reports 240 acres are infested, but the spraying will cover a total of 388 acres to include adjoining properties.

Especially hard hit in the Lansing area, the northwest section of the city, have been the evergreens and lawns.

NEW PRESIDENT NAMED

NEWARK, N.Y.—Bernald C. Bush has been elected president of C. W. Stuart & Co., nursery company. He succeeds Arthur Christy, who had been active in the organization since 1896. Mr. Christy becomes vice chairman of the Stuart board.

Black Fly Found In Rio Grande Citrus Orchards

WELASCO, TEXAS—The black fly has been found in the citrus orchards of the Rio Grande River. This insect is a leaf sucker that can completely ruin a year's citrus yield and seriously damage the trees.

This is the second time in the valley's history that the black fly has been found. It was discovered earlier in the summer inside the city limits of Brownsville. Recently a citrus tree south of Progresso was found to be infested, and inspection revealed another in the same area.

The Mexican Department of Agriculture is cooperating with U.S. officials in surveying the extent of the infestation. When the survey is completed, workers will map out intensive control measures.

SOIL SAMPLES

KINGSTON, R.I. — The Rhode Island Experiment Station tested 2,994 soil samples during 1954, an increase from 2,638 samples tested in 1953.

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SEE Page 9 . . .

Better Selling
Richer Sales Fields for Dealers

INSECT, PLANT DISEASE NOTES

Corn Borers Still Threaten in Illinois

URBANA, ILL.—Pupation of first-generation corn borer is now complete, with about 10% of the moths yet to emerge. Egg laying, although decreasing from the peak of the past two weeks, remains moderately heavy, and many fields still average almost one fresh egg mass per plant.

However, in many instances very late-maturing fields average two fresh egg masses per plant. Moth flight, although not as heavy as a week ago, is still quite noticeable, and egg laying will probably continue for another two to three weeks. Feeding of the second-generation borer is now visible, and all sizes of borers are present in the stalks.

Green clover worms are now to be found throughout much of Illinois, particularly in the north-central and central sections. These green worms with whitish stripes can be found in all soybean fields. They range in size from an inch down to about one eighth inch. They drop to the ground when plants are jarred suddenly.

Grasshoppers, which are either in or approaching the adult stage, are still extremely abundant in some fields. Hay crops are primarily affected. In some instances the grasshoppers are migrating to soybeans and corn, where they are damaging the marginal rows. Control measures applied now, before too many eggs are laid, may help to avoid a grasshopper problem next year.—H. B. Petty.

Cotton and Vegetable Pests Make Trouble

STATE COLLEGE, N.M.—Cabbage loopers are causing damage to cotton in Eddy and Roosevelt counties. Several adults have been collected in light traps in cotton fields in Dona Ana County. Cotton bollworms are general throughout Dona Ana, Eddy and Chaves counties, and cotton leafworms are causing damage in a few fields in Eddy County.

White-lined aphinx larvae are migrating in large numbers across range lands, feeding on weeds in Otero County; apple leafhoppers are causing damage to apple trees in Bernalillo County, and leafhoppers are very numerous at lights in Las Cruces.—John Durkin.

Velvetbean Caterpillar In South Carolina

CLEMSON, S.C.—An outbreak of the velvetbean caterpillar, the No. 1 pest of soybeans because it voraciously eats the leaves, is on the way, Clemson Agricultural College reports.

Farmers of Calhoun County, S.C., have already reported injury to small buds of soybeans from the corn earworm. Extension specialists in Clemson Entomology and Plant Disease Work, in their weekly Insect and Plant Disease Notes, give the following brief descriptions of these pests and methods for their control:

The velvetbean caterpillar is migratory and overwinters in the tropics and sub-tropics. It is either blown into or flies into the state during the latter part of the summer.

Entomologists of the Truck Experiment Station, Charleston, report the first adult for the season was taken in a light trap on July 28. During 1954 the first moth was captured July 9.

Appearance of the moths indicates that young caterpillars will be present on soybeans in the coastal area, but when they will be present in large enough numbers to justify control measures is something the individual farmer will have to determine for himself. County agents are alert to the situation and will issue warning to growers in their counties when the need arises.

The corn earworm, which damages small soybean seed pods and may also later feed on foliage, is known under a number of aliases. Among them are the cotton bollworm, tobacco budworm, vetch worm, clover worm, tomato fruitworm and others. It overwinters in South Carolina and has numerous generations.

All of this season the corn earworm has been above normal in abundance and true to the pattern of population increase for this insect—each generation has become larger than the preceding. Corn and cotton are becoming too hard in most fields in the Coastal Plains for these insects to damage; so they can be expected to transfer their feeding activities to crops of beans, grain sorghum, and other crops, including snap beans and butterbeans, tomatoes and fall cabbage.

Hoppers Increase in Both Numbers and Appetites

COLUMBIA, MO.—The over-all grasshopper situation remains about the same. Several fields of corn were seen where hoppers had so severely eaten the silks and tip ends of the ears that pollenization was retarded, resulting in an ear with very few grains of corn.

The differential hopper began egg laying this week, and should reach a peak in about two weeks although egg laying will continue until cold weather destroys the hoppers. These eggs that are now being laid are the seed for the 1956 crop of grasshoppers. Control now will protect fall sown crops as well as reduce the total egg laying and potential damaging populations during the coming year.

A few small armyworms were found in grasses this week. Where moisture has been sufficient to keep volunteer oats and grasses succulent, watch for damaging infestations. When populations reach 4 unparasitized worms to the square foot, use the same controls as against the spring generation on small grains.

Another generation of webworms is beginning to build up on new growth alfalfa. So far it is still light but there are plenty of moths present that will tend to increase the damage as plant growth continues. Use the same control measures listed in several of the previous newsletters and urge caution in following application dates to avoid serious residue problems.—Stirling Kyd and George W. Thomas.

Grasshopper Problem Increases in Kansas

MANHATTAN, KANSAS — The mid-summer adult grasshopper survey continued in Kansas this past week. Population counts in northeast Kansas counties ranged from non-economic to threatening (localized areas); however, in general, populations appeared lower than last year at this time.

Localized infestations were readily noted along the margins of some corn, alfalfa and soybean fields where counts ranged from 6 to 28 per sq. yd. Average counts for most fields ranged from 2 to 9 adults per sq. yd. A rather general infestation of second generation lesser migratory grasshoppers was found in most alfalfa and red clover fields in northeastern counties. Nymphal counts ranged from 4 to 15 per sq. yd.

No evidence of dead grasshoppers from fungus disease was observed; however, chemical controls, where applied, have proved very satisfactory and have reduced grasshopper populations in localized areas.

Yellow clover aphids were found on red clover in fields of Atchison, Brown, Doniphan and Jackson counties, northeast Kansas. Counts ranged from 5 to 180 aphids per sweep (15-inch net). Lady beetle populations in the infested fields averaged about 3 adults per sweep. No lady beetle larvae or pupae were observed in these fields.

An infestation of yellow clover aphids on alfalfa was reported from Scott County, west-central Kansas. Specimens received from the grower confirmed this report (Gates).

A non-economic infestation of pea aphids was found while sweeping a red clover field in Atchison County, northeast Kansas. Counts, although insignificant, ranged from 1 to 5 aphids per sweep.

Examination of corn fields in northeast Kansas counties showed that corn earworm infestations in field corn ranged from 4 to 44%. Larvae ranged in size from 2nd to 4th instar. No corn earworm larvae were found feeding on sorghum and milo heads in any of the fields that were surveyed.

Light infestations of fall armyworm larvae were found in field corn in a few localized areas of northeast Kansas. No stalk injury was observed and infestations in ears of corn ranged from 0 to 16%.

Adult flea beetles were found feeding on corn leaves in fields in Atchison, Brown and Jackson counties. Counts ranged from 3 to 7 beetles per leaf in some fields. The leaves show definite feeding injury.

Infestations of European corn borers were found in corn fields of Atchison, Brown, Doniphan, Jackson and Marshall counties. Infestation of stalks ranged from 4 to 24% with an average of 1.5 larvae per stalk. Larvae range from 2nd to 4th instar and a few moths are still being taken in the light trap at Blair, Doniphan County.

Light to moderate localized infestations of blister beetles were found in a few fields of alfalfa in Brown and Atchison counties. Counts ranged from 3 to 14 per sweep.—David L. Matthew, Jr.

Damp Weather Ideal For Increasing Pests

PHOENIX, ARIZ.—Recent rains have been very ideal for increase of insects as well as diseases. Some bottom defoliation is in progress in some of the areas and some fields look very excellent.

In Maricopa County the extension entomologist and assistant county agent Carter and the workers of the USDA found that bollworms were increasing in many fields. It was also interesting to note that Lygus counts were still very high and causing serious injury to almost all fields where the insects were present.

In the western part of Maricopa County the salt marsh caterpillar increased very rapidly; however, in most cases applications of 30 lb. or more of 15% toxaphene and 5% DDT seem to control all except those eggs that hatched after applying insecticides.

In Yuma County bollworms, cotton leaf perforators and mites continue to be the greatest problem. In a few late fields, the Lygus also present a problem.

In Graham County, the extension entomologist found that bollworms are prevalent in almost all fields. It is also interesting that Lygus counts are very high and cause injury in both long and short staple varieties. In Greenlee County bollworms are causing the greatest injury.—J. N. Roney.

Most Georgia Cotton Fields Infested

ATHENS, GA.—Eighty fields in 2 North Georgia counties were inspected for the weevil during the week and all were infected.

Counts in 5 untreated fields ranged from 53 to 72% punctured squares with an average of 63% (average last week—42%). Counts in 75 treated fields ranged from 10 to 36% with an average of 20% punctured squares —(average last week—16%).

Terminal bud inspections in 2 fields averaged 1 bollworm egg and worm per 100 terminals. Bollworm damaged squares averaged 0.8% in the 5 untreated fields and 0.4% in the 75 treated fields.

Aphid infestations in the 80 fields were rated as follows: none—39; light—25; medium—12; heavy—4. Spider mite infestations in the 8 fields examined were rated as follows: none—40; light—26; medium—8; heavy—6.

Weevil infestations continued to increase this week. This is to be expected with cotton maturing and squares becoming scarce in many fields.

Applications of insecticide should be continued for boll protection where needed. One half bale per acre or more often is lost due to the lack of two or three late season applications for boll protection. The bolls in many North Georgia fields still are very susceptible to weevil and worm damage.—C. R. Jordan.

Variety of Bugs Is Reported in Maryland

COLLEGE PARK, MD.—Grasshopper adults and nymphs are abundant in alfalfa on some central Maryland farms. We found three per sweep in one field. Seven adult grasshoppers on each square foot will eat as much as a cow. Spittlebugs have started mating. Egg laying on grain stubble or grass stems will follow.

What we hope is the last spurt of the season of the Japanese beetle emerged since the rains to harm roses.

Hornworms are damaging tobacco severely in southern Maryland. The crop is maturing rapidly and growers are faced with the problem of killing the hornworms before storing. The growers are employing airplane operators for treatment against the worms.

Tarnished plant bugs are reported injuring lima beans on the Eastern Shore. Bugs puncture flowers and pods, causing blossom drop or malformed beans. House flies have increased since the recent rains. Box elder bugs and elm leaf beetles have begun to make trouble in houses.—Theo. L. Bissell.

Orchards Damaged by Attacks of Insects

VINCINNES, IND.—Spot checking of orchards between Vincennes, Ind. and Benton Harbor, Mich., for insect abundance and activity was made. South of Indianapolis, principal insect injury seemed to be codling moth, although it was not as abundant as in 1954. In some orchards control was not considered to be satisfactory.

Orchard mites were not as troublesome in the southern half of Indiana as in 1954. The predominant specie was the European red mite, whereas in previous years (since 1950) Tetranychus species

ve been prominent. Tetranychus ecies have been increasing in mbers in the Vincennes area dur- the past 10 days. This increase approximately 60 days later than 1954. The high population of dling moth present in the south- n half of the state means that ples must be protected by sprays to early September.

n the northern part of Indiana and the Benton Harbor, Mich., area ling moth injury was very light. commercial damage existed in the hards visited, whereas in 1954 in- was excessive in some of these e orchards. European red mite ry in northern Indiana and in the nton Harbor area was more severe all fruits than in 1954. In several hards severe leaf injury had oc- red.

Infestations of red-banded leaf ller were exceptionally high on ples, peaches, cherries, blueber- s and raspberries in the Benton rbor area. Orchards visited in rthern Indiana had this pest un- r control.

Bacterial spot on peaches seemed be exceptionally frequent and se- e in all of Indiana and the Michi- n area visited. One orchard of El- ta peaches near Benton Harbor l likely be a complete loss because this disease.—D. W. Hamilton.

olorado Reports Many rasshoppers in State

FORT COLLINS, COLO. — Many m crop insects continue to be ublesome throughout Colorado, h grasshoppers taking the doubt- honor of being one of the most ious pests at this time.

Colorado insect reports state that largest population of grasshop- s is in extreme eastern Kiowa unty, where about 175,000 acres of pland are seriously infested. This e infestation extends eastward o Greeley County, Kansas, south o Prowers County, Colorado, and thward into Cheyenne County.

Crops in the stricken area consist small grains, row crops and a all amount of grassland.

Also in the southeastern section the state, in Pueblo, Otero, Bent d Prowers counties, the Colo- do corn root worm has been und infesting a large number of rn fields. Corn in these same unties may also be in for damage om corn earworm, according to e report. Large populations of rworm larvae are present there d also in Weld and Larimer coun- s.

Poorly treated apple orchards in ta and Mesa counties are in seri- trouble caused by codling moth, ording to Dr. L. B. Daniels, chair- n of the insect detection commit- and chief entomologist for the orado A&M Experiment Station. st of the trouble can be traced to r coverage by sprays, he said. ll sprayed orchards are experienc- little difficulty.

Western Colorado's most serious ct problem continues to be the ling moth. Reports reaching Dr. niels indicate that DDT spray has n ineffective, even in areas where rough application has been made. e situation is described as "criti- ."

Dr. Daniels warns that growers of tified seed potatoes in northeastern orado should be concerned with a ent sharp increase in aphid counts. recommends adequate use of in- ticides during the rest of August September to keep down virus ease spread.

Meanwhile, light trap collections of er leaf hopper at Rocky Ford, eley and Longmont, reflected a ond peak in numbers. The insect nsmits aster yellows, which is g reported in onions, carrots and atoes.

Importance of Soil Sampling Stressed by Mississippi Agronomist

STATE COLLEGE, MISS.—Farmers may save money by having their soil tested before buying the fertilizer materials to be applied this fall when planting temporary or permanent grazing crops.

L. E. Gholston, associate agronomist of the Mississippi Agricultural Extension Service, said the soil samples should be collected now and sent to the laboratory so the results will be back in time to be used.

"Lime may be needed, and some phosphorus and potash are usually required to get top efficiency from nitrogen applied to cereals such as oats, wheat, rye, barley; and from rye grass alone or in combination with crimson clover," he said.

Free soil sample boxes, mailing cartons and information about how to collect the samples are available at all Mississippi county agents' offices, he said.

In Walthal County, Sept. 5-10 has been designated Soil Testing Week, according to Ansel Estess, county agent, Tylertown.

Soil samples will be taken from land that will be seeded to winter grazing and from permanent pasture areas, Mr. Estess said. All Walthal farmers have been urged to deliver their samples to the county agent's office, who will send them to the laboratory.

POTASH SAVES TOBACCO

JASPER, FLA.—A Hamilton County, Fla., farmer, with 18 acres of tobacco under irrigation, was encountering a complete potash deficiency, resulting in a very poor quality cookout, says Rance A. Andrews, county agent. After 100 lb. sulphate of potash per acre was added and watered in, he says, the deficiency was corrected and "good tobacco is being cured out for market."

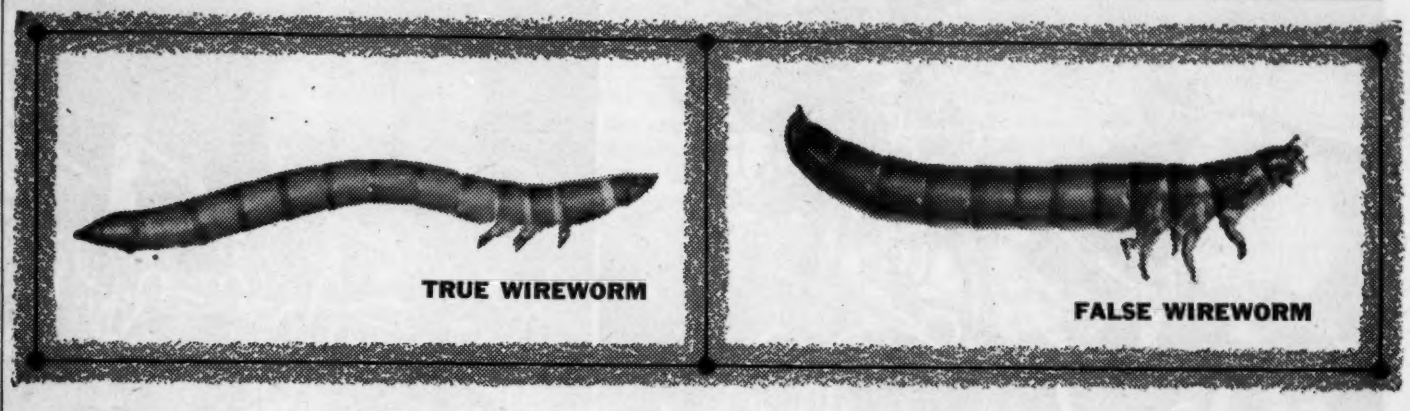
Fertilizer Quadruples Forage Yields in Texas Experiment

CRYSTAL CITY, TEXAS—Use of fertilizers has more than quadrupled forage yields on irrigated acreage in tests made in Zavala County, near here.

Carl S. Hoveland, agronomist at the Winter Garden Experiment Station, reported that a combination of 180 lb. of nitrogen and 60 lb. phosphoric acid per acre increased oat yields to 5,650 lb. air-dry forage per acre, compared to a yield of 1,160 lb. on similar land without fertilizer.

Using nitrogen alone on one plot of oats, the experiments increased the yield to 4,450 lb.

Net returns per acre for the nitrogen-phosphate combination amounted to $25.62, after deducting total costs of $59.13 per acre, while the profit from acreage receiving the nitrogen application was $21.35 per acre.



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with a single dieldrin seed treatment

Farmers can treat seed now ...plant later... dieldrin safeguards seeds... does not affect germination

FARMERS CAN BE SURE of a better stand of wheat by planting dieldrin-treated seed. A single treatment with dieldrin protects wheat and other small grains from true and false wireworms, rootworms, ants, and other soil insects, without affecting seed germination or root growth.

Low-cost protection

Two to four ounces of actual dieldrin treats 100 pounds of seed . . . costs just pennies per acre. A dieldrin seed treatment prevents "spotty" stands caused by soil-insect damage . . . eliminates re-seeding.

Less work at planting time

Growers now can avoid the rush of treating seed and planting within a few days. They can treat now with powerful, long-lasting dieldrin —then store seed until planting time.

Compatible with fungicides

Dieldrin is compatible with fungicides . . . can be applied at the same time to save the expense and work of a double treatment. Dieldrin can be used as a slurry, dry, or in a grain drill. Follow directions on the label.

Build sales and profits with dieldrin seed treatment

Timely national advertising is pre-selling farmers on the benefits of dieldrin seed treatment. Make extra profits this season . . . sell dieldrin for seed treatment. Write for additional technical information.

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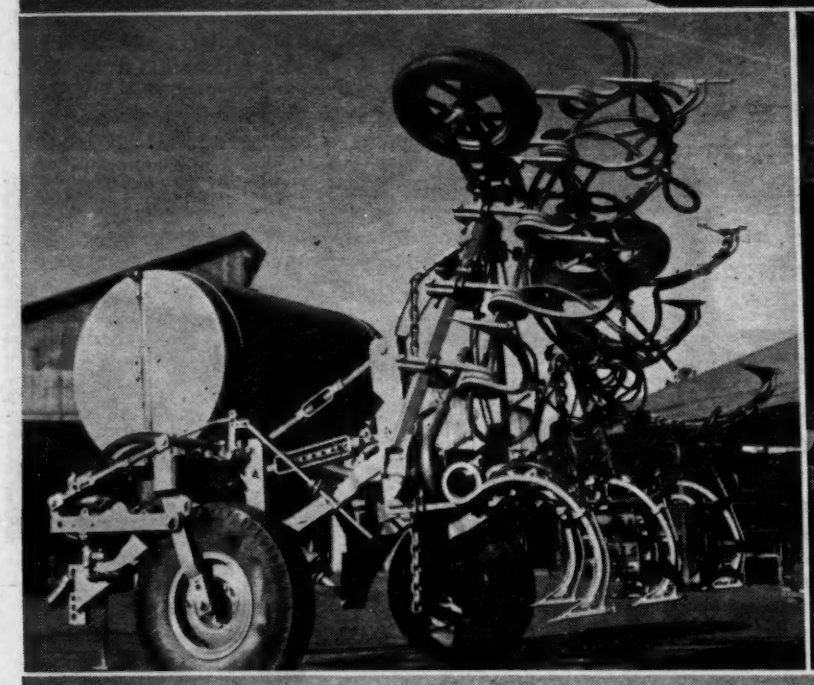

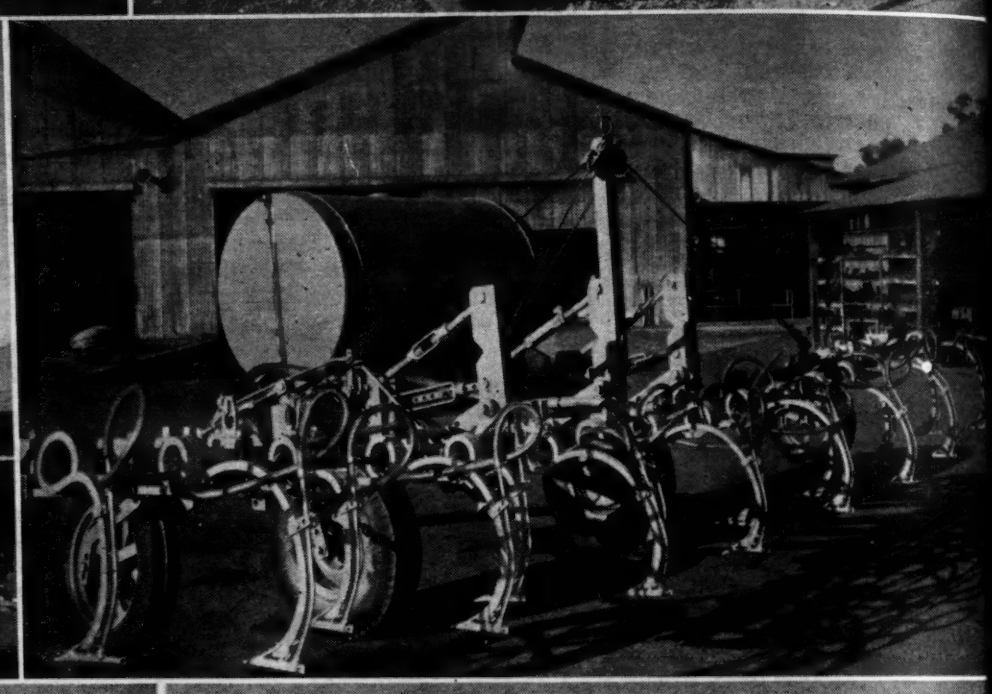

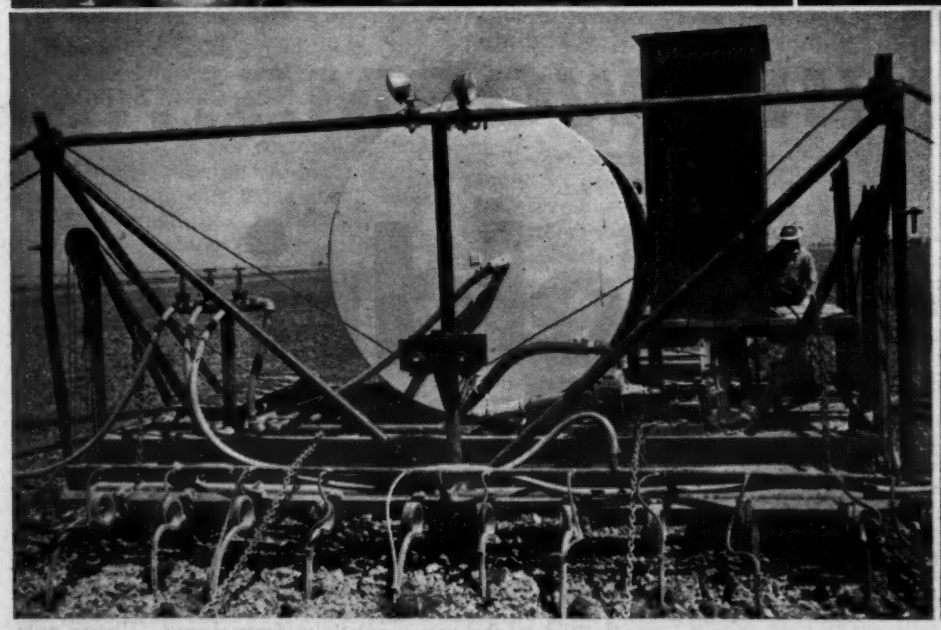

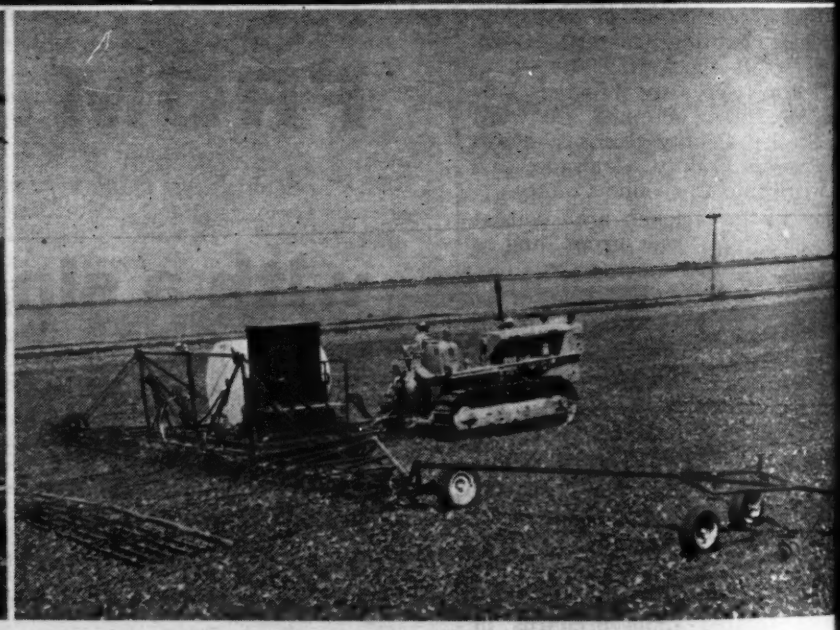

INGENUITY AND IMAGINATION—Both of these factors go hand-in-hand with modern chemical agriculture, particularly in California where the wide variety of crops and climatic conditions lend themselves to innovations.

Increases in the use of liquid fertilizer materials have made necessary unusual service on the part of dealers. In the top photo (left) is a truck belonging to Border Fertilizer and Supply, Inc., El Centro, Cal., loading full tanks of liquid materials. Tanks are on adjustable legs which hold the tank just high enough for the truck to back under it for loading, thus eliminating the necessity for lifting by hand. Once on the truck, the legs are loosened, thrust upward and locked in the "up" position for hauling.

Service to the user comes through depositing these full tanks of fertilizer at strategic spots in the field, so the applicator may drop off his empty tank and take on the full one as shown in the upper right.

Middle row: Necessity for transporting application equipment down the highway has led to folding booms which may be put in the position show at the left, for towing. Once at the site, the ends of the boom are let dow and the machine is ready to go. Liquid is pump fed.

Below: Heavy equipment is suitable only for broad fields. Powerful tracto is needed for a pull of this type. In lower left photo, notice size of tank com pared to man at right. In the lower right shot, the rig is seen doing its fe tilizer application job in California.

Originally designed as a 2-man rig, refinements now have made possibl application of liquid fertilizer by a 1-man crew covering 500 acres in 24 hour The large fertilizer tank is carried on a track-type rig, similar to that o the tractor. Fertilizer is force fed by pump. A following harrow prepares th seedbed further. Due to the width of the application at each sweep, a speci outrigger (right) drags a weight to guide the operator on the next roun (Photos courtesy Monsanto Chemical Co.)

30 Students in American Potash Summer Program

LOS ANGELES — Thirty college students, most of them undergraduates studying for degrees in chemistry or chemical engineering at 12 different colleges and universities, are getting a preview this summer of a career with a major chemical company.

The group is employed at American Potash & Chemical Corp.'s main plant at Trona, Cal., where the students are learning how chemicals for agriculture and industry are produced. The group includes students from Brigham Young University, University of Oklahoma, University of Texas, University of New Mexico, University of Redlands, University of Washington, University of Colorado, Stanford University, Loyola University, San Diego State College, University of California and Oregon State.

Under American Potash & Chemical Corp.'s summer employment program, most of the students work at regular starting production jobs, although some are assigned to special technical projects in the company's research or plant technical services departments.

American Potash & Chemical Corp.'s student summer employment plan was inaugurated on a formal basis about five years ago to help train students for permanent positions and also to help fill in during summer vacation periods.

The plan has been so successful that the company now sends company personnel to numerous colleges and universities throughout the West to get acquainted with teachers and students.

New Jersey Finds Gypsy Moth Invasion

TRENTON, N.J.—The first seriou invasion of male gypsy moths in Ne Jersey in 25 years has been disco ered near the northern border of th state, according to Dr. Henry Weiss, director of the Division Plant Industry of the State Depar ment of Agriculture.

Dr. Weiss said that by mid-Au gust some 70 male moths had bee collected in traps along the norther borders of Bergen, Passaic and Su sex counties.

EFUTES CU

Organ But Su nade

By MILTO

Rhode Island Ag Station, K

"If you plante emical fertiliz g of compost, rout and grow n put to me ner "sold" on nic matter alo ent for impro course, the a vious! It was e gardener and out the same

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There is no qu trained farm s as to the va r for good soil For many year rnyard manur ops in planne ented by fert rongly recomm nized that org al role in the l structure. N le storehouse ts as nitroge t it also acts any vital phe ace in the nat ant-soil commu There is some ganic matter fects upon soil rly some of the

By lending th dvice of traine ressing the i rganic matter, eners" have p ervice. Unfortu his service h laims that have dge, been supp al evidence.

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1. Chemical f s to soils and p is assertion is sometimes ma ate is a pois use it is man g raw rock p ric acid, a noxi al. On this sa y that commo loride, also is compounded

EFUTES CULT'S VIEWS

Organic Fertilizer Good, But Supply Is Completely Inadequate for Sole Use

By MILTON SALOMON
Rhode Island Agricultural Experiment Station, Kingston, R.I.

"If you planted a seed in a bag of emical fertilizer and another in a g of compost, which seed would rout and grow?" This was a ques- n put to me by a back yard gar- ner "sold" on the virtues of or- nic matter alone as a soil amend- ent for improving plant growth. course, the answer expected was vious! It was apparent also that e gardener and I were not talking out the same thing.

This is presented merely as an ex- mple of the half-truths and confused inking that are being used by a w well-meaning adherents of the ganic and bio-dynamic sect to stify their criticism of well-pub- ized and proven agricultural prac- es.

During the past 50 years there has en a growing interest in the quan- y and quality of crops raised upon ils treated wholly with organic stes, composts, naturally-occurring rtilizers and lime.

It is believed by some that, in ddition to a multiple of panaceas or the human race, plants grown n "nature's way" are endowed with ome magical qualities which make hem particularly resistant to at- ack by insects and disease and uarantee an ever-productive agri- ulture. The use of chemical fer- ilizers, on the other hand, is be- ieved to aggravate the conditions f nature. In fact, the cause of many of the nutritional woes of mankind is attributed directly to heir use.

There is no question in the minds trained farmers and agriculturi- s as to the value of organic mat- r for good soil management.

For many years the proper use of rnyard manures and green cover ops in planned rotations, supple- nted by fertilizers, has been rongly recommended. It is well rec- nized that organic matter plays a al role in the maintenance of good il structure. Not only is it a valu- le storehouse of such plant nutri- ts as nitrogen and phosphorus, t it also acts as a regulator in ny vital phenomena that take ce in the natural balance of the nt-soil community.

There is some recent evidence that ganic matter may have antibiotic fects upon soil pathogens, particu- rly some of the root-rot organisms.

By lending their support to the dvice of trained agriculturists in ressing the importance of soil rganic matter, the "organic-gar- eners" have performed a useful ervice. Unfortunately, along with his service have come several laims that have not, to my knowl- dge, been supported by substan- ial evidence.

Let's look at some of these "or- nics only" claims and see what the al facts are.

1. Chemical fertilizers are poison- s to soils and plants. To a chemist, is assertion is absurd. The claim sometimes made that superphos- ate is a poisonous fertilizer be- use it is manufactured by treat- g raw rock phosphate with sul- ric acid, a noxious, corrosive chem- al. On this same basis we could y that common table salt, sodium loride, also is poisonous as it can compounded from hydrochloric acid and caustic soda, both very poi- sonous chemicals. Yet we know there is nothing harmful about table salt unless a large overdose is consumed.

Research at the Agricultural Ex- periment Station and elsewhere has shown no injurious effects to plants or soils by repeated and often heavy applications of a variety of chemical fertilizers. Yields have been main- tained through the years as have the general physical, chemical and microbiological properties of the soil.

2. Plants grown by strictly organ- ic methods are not susceptible to disease or insect attack. This claim appears to me as the one with least supporting evidence. I have recently read in an organic farming publica- tion where dusts made from natu- rally occurring chemicals such as limestone and sulfur are recommend- ed for use by the organic gardeners to keep insects and diseases from attacking their plant. This certain- ly isn't in line with the contentions that plants grown the "organic way" are immune to such attacks.

Glance at history with its accounts of locust plagues, the potato blight in Ireland in 1845 and the disaster brought on by downy mildew in the vineyards of France in 1882 prior to the use of chemical fertilizers in these areas—dramatic illustrations of the inconsistency of this claim. Plant diseases on a world-wide scale have been recognized for a long time. In fact, a close check is made by our governmental quarantine agencies upon plant materials shipped in from areas where chemical fertilizers are still unknown or not used.

3. The appearance, taste and nu- tritional quality of foods grown with chemical fertilizers are inferior to those grown solely with organic amendments. No where to my knowl- edge has this claim been supported by unbiased and recognized research organizations. A great deal of work needs yet to be done along these lines. Questions that need further study are the possible effects that various forms of fertilization have upon succeeding generations of plants and animals.

Work at Cornell University in co- operation with the U.S. Department of Agriculture compared vitamin A, vitamin C, iron and copper contents of certain crops in relation to organic vs. chemical fertilization. No signifi- cant differences attributable to the source of plant nutrients were found.

People who have traveled in for- eign countries report that the ap- pearance of food sold on the Ameri- can market is far superior to that obtainable in many areas where chemical fertilizers, insectcides and fungicides are not used.

4. Diseases of mankind, including cancer, can be traced directly to the use of chemical fertilizers. This claim is closely allied to item 3 above and is entirely without foundation. Can- cer-like diseases were widely recog- nized by the medical profession prior to 1900 or before the widespread use of chemicals. Last year the average age of Americans reached an all time high. Equally significant was the greatest birth rate and lowest death rate on record. Of course there are a number of contributing factors to this apparent well being of the American people.

However, it has been estimated that about 75% of all food consumed in this country is raised on land that has received some chemical fertilizer. This fact cannot be overlooked in its relationship to the quantity and nutritional value of foods consumed in this country.

While only a few of the claims of the organic gardeners have been cov- ered here, there are a number of economic considerations which must be included in a survey of this en- tire question. Would it be possible to produce sufficient food to feed the world by using only organic com- posts?

The "organics only" gardeners as- sure use that it is quite feasible. The facts show different. It has been estimated that if all the sewage, garbage and other organic waste ma- terials produced in this country were turned into compost as proposed by the follower of the organic school, the total output would satisfy not more than 5 to 10% of the fertilizer requirements for present crop pro- duction.

In order to fill our entire fertilizer needs in terms of compost it would require that we set aside a stag- gering percentage of the world's land area merely to provide organic resi- dues for conversion into compost. With our present adequate fertilizer resources this is economically un- sound.

Lady Eve Balfour, a leading cru- sader of the organic school in Eng- land, estimates that the addition of one farm laborer per hundred acres of farmland would suffice to put their plan into operation. Pro- jecting this same ratio to the culti- vated acreage in the U.S. would call for the hiring of about 5 to 6 million additional farm workers. Recruiting this many additional farm hands under our present econ- omy would be most difficult.

It is generally agreed that for the backyard gardener the use of prop- erly prepared composts as the sole source of fertility is entirely possible. Of course we are dealing here with a form of agriculture which doesn't necessarily need to consider economy or practicability of operation.

We feel the organic method ad- herents are passing up a real bet when they fail to take advantage of chemical fertilizers. Here is the means of growing more organic matter cheaply. Present recommen- dations call for the use of fer- tilizers in conjunction with organic residues.

There is no better way to enrich organic matter than to add chemical fertilizers to compost heaps and green cover crops.

There is no more practical way of increasing crop production while maintaining soil fertility than through the wise use of chemical fertilizer.

Oregon Names Plant Disease Specialist

CORVALLIS, ORE.—Oregon State College has announced appointment of Iain MacSwan as extension plant pathology specialist to assist state commodity groups, county extension agents, and individuals in combating plant diseases. He fills a recent va- cancy in the department.

Mr. MacSwan will be in charge of the OSC plant clinic founded 15 months ago to provide free diag- nosis of sick plants for Oregon farmers and gardeners. The new specialist will also co-ordinate the educational program between local county extension agents and OSC plant pathology researchers and will work closely with Oregon com- modity groups in conducting their industry improvement programs.

Mr. MacSwan graduated from the University of British Columbia in 1942 and later did graduate study in plant pathology and plant nutrition there. Since 1948, he has been as- sistant provincial plant pathologist in the British Columbia department of agriculture with headquarters at Vancouver.

North Carolina's Fertilizer Tonnage Up in 1954-55 Year

RALEIGH, N.C. — Fertilizer ton- nage in North Carolina for the fiscal year, July, 1954 through June, 1955, was 15,061 tons greater than that reported for the same period a year ago, according to John L. Reitzel, assistant commissioner of the State Department of Agriculture. The re- port listed tonnage for 1954-55 as 1,830,633 tons as compared to 1,815,- 572 for the previous fiscal year.

According to the report, the high- est tonnage calculated in recent years was 1951-52, when 1,900,904 tons were recorded. The year of 1952-53 was also high, with 1,849,863 tons.

Five years ago, 1949-50, the report indicates the use of 1,682,365 tons.

WHICH TWIN HAS THE FERTILIZED PASTURE?

DULUTH, MINN. — One of five identical twin dairy heifers gained 35 lb. more in five weeks on fertilized pastures than her twin grazing near- by unfertilized pastures at the Uni- versity of Minnesota's Northeast Ex- periment Station here.

Farmers attending the annual sta- tion field day saw the 10 heifers in the experiment and got a closeup view of several other interesting re- search projects underway here.

Ralph Grant, station superintend- ent, says the five twins, grazed ro- tationally on four unfertilized pas- tures, gained a total of 205 lb. from June 22 through July 25, while their sisters grazing four fertilized pas- tures in rotation gained over 100 lb. more—a total of 315 lb. in the same period. Their weights on June 22 ranged from 370 to 450 lb.

Best gainer on fertilized pasture put on 75 lb., the poorest gainer 55 lb. Best gainer on the unfertilized pasture was—strikingly enough—the identical twin of the best gainer on the fertilized pasture. She gained 55 lb. Poorest gainer on unfertilized pas- ture gained only 25 lb. Her twin on fertilized pasture gained 60 lb. in the same period. Both began the test at 400 lb.

Here's what made the difference: The acre of fertilized plots got four tons of lime, 200 lb. 0-20-20 and 180 lb. 33.5-0-0.

Just before letting the heifers in, a mower strip was taken out of each of the eight one quarter acre pas- tures—four fertilized, four unfertil- ized. The four fertilized sections totalling one acre yielded 30 tons of grass—the unfertilized sections just half, 15 tons. The most luxuriant of the four fertilized pastures yielded a little over eight tons of forage per acre, the poorest gave about six. The best of the unfertilized pastures yield- ed about six, the poorest two tons.

The animals were grazed in a ro- tation system in which the best of each kind of pastures was grazed down and, after the animals were moved onto fresh areas, the last- grazed pasture was clipped.

Mr. Grant says they plan to con- tinue the tests for three or four sum- mers, noting how the 1955 fertilizer's residual effect holds out.

Olin Mathieson Dividend

NEW YORK — The directors of Olin Mathieson Chemical Corp. have declared the regular quarterly divi- dend of 50¢ a share on the common stock. The dividend is payable Sept. 10, 1955 to common stock held of record at the close of business Aug. 17, 1955. Directors of the corpora- tion also declared the regular quar- terly dividend payment of $1.0625 on the convertible preferred stock, 1951 series, payable Dec. 1 to shares held of record at the close of business Nov. 17, 1955.

Du Pont, Dow File Applications For Tolerances

WASHINGTON—Food & Drug Administration has disclosed that it has received petitions from the E. I. du Pont de Nemours & Co., Wilmington, and the Dow Chemical Co., Midland, Mich., for the establishment of residual tolerances for certain pesticidal chemicals produced by those companies.

Du Pont has filed petitions proposing the following tolerances:

(1) For residues of EPN (*O*-ethyl-*O*-*p*-nitrophenyl benzene thiophosphonate), a tolerance of 3 parts per million on grapes, olives, tomatoes, onions, and sugar beets (including tops), and a tolerance of 0.5 part per million on pecans, walnuts, almonds and cottonseed.

(2) For residues of ferbam (ferric dimethyl dithiocarbamate), a tolerance of 0.1 part per million on almonds, calculated as zinc ethylene bisdithiocarbamate.

(3) For residues of zineb (zinc ethylene bisdithiocarbamate), a tolerance of 7 parts per million on mushrooms, calculated as zinc ethylene bisdithiocarbamate.

(4) For residues of ziram (zinc dimethyl dithiocarbamate), tolerances of 0.1 part per million on almonds and pecans and 7 parts per million on strawberries, calculated as zinc ethylene bisdithiocarbamate.

Establishment of residual tolerances also has been requested by Du Pont for methoxychlor for a list of raw agricultural commodities and meat.

The request proposed establishment of the following tolerances: 125 parts per million on grass crops (pasture and forage grasses), legumes for forage - alfalfa clover, cowpeas, peanuts and soybeans; 14 parts per million on carrots and carrot tops, currants, gooseberries, mint and peanuts; 3 parts per million on meat, and 2 parts per million on grains and dried seed of cereal grass.

Dow is requesting the following tolerances in parts per million for residues which result from fumigation of the designated raw agricultural commodities with methyl bromide:

Apples, pears and quinces, 5; onions, 10; tomatoes, 20; eggplants, 30; beets, green beans, snap beans, lima beans, black-eyed peas, cocoa beans, wheat, rice, rye, oats, barley, corn, grain sorghum and sweet potatoes, 50; alfalfa hay, peanuts, Irish white potatoes, pecans and turnips or rutabagas, 75; cottonseed 200.

DU PONT STOCKHOLDERS

WILMINGTON—E. I. du Pont de Nemours & Co., Inc., was owned by 152,855 stockholders as of June 30, 1955, an increase of 1,020 over the number of holders recorded at the close of the first quarter of 1955, and an increase of 4,508 over the number on June 30, 1954.

Jack M. McConkey

Jack M. McConkey Joins Seattle Staff of Wilson & Geo. Meyer

SEATTLE—Jack M. McConkey h joined the Seattle sales staff of W son & Geo. Meyer & Co., Pacific Co distributors of agricultural and i dustrial chemicals, the offices Seattle are located at 531 Exchan Bldg.

A native of Seattle and a gradua of the University of Washington business administration, Mr. McCo key was associated with the Seat offices of Balfour, Guthrie & Co., fertilizer department manager a Chas. H. Lilly Co. as general sal manager before joining the Mey firm.

Mr. McConkey's service in Wo War II included three years in Alas with the army ordnance departme

The Meyer firm, a 105-year-old co cern with head offices in San Fra cisco, is Western sales representati for many agricultural and industr chemical products, including Stauf Chemical Co. and Western Ph phates, Inc., phosphate fertilize Norsk Hydro, Norwegian calcium trate and urea; American Potash a Chemical Corp., potash salts; We ern Peat, Ltd., Canadian peat m products; and Eastman Chemi Products, Inc., chemicals and plasti

The firm also maintains offices Portland, Salt Lake City, Fresno, L Angeles, Phoenix and Denver.

Production of Inorganic Chemicals Shows Drop in June

WASHINGTON — After setti new monthly records for seve months, production of anhydrous a monia dipped to 261,285 tons in Ju according to the U.S. Department Commerce. This was a decline fr the output of 296,799 tons in M which is the monthly record. Prod tion of anhydrous in June a y ago was 216,786 tons.

June production of fertilizer gra ammonium nitrate was 129,765 to compared with 135,265 tons in M Synthetic ammonium sulfate outp (excluding by-product coke oven p duction) in June totaled 90,735 to compared with 104,138 tons in May

Phosphoric acid output declined June to 261,312 tons, compared w 306,851 tons in May.

CORN YIELDS DOUBLED

EFFINGHAM, ILL. — Althou corn yields average about ten bush lower in southern Illinois than in t rest of the state, the soil respon very well to fertilizer. Corn yie have been doubled on the Univers of Illinois soil experiment fields the area, M. B. Russell, head of t Department of Agronomy has reported.

Quality is the watchword at the big, new V-C Triple Superphosphate plant at Nichols, Florida. Here, V-C Triple Superphosphate is produced so that it retains its natural, desirable texture—a big help to you in simpler, faster ammoniation in your plant. This superior texture also helps you cut down on recycling at your mixing machines. V-C Natural-Texture Triple Superphosphate is backed by many years of experience and production know-how. V-C pioneered in the production of concentrated superphosphate as far back as 1907, when it put into operation, at Charleston, S. C., the first large-scale plant in the United States.

Depend on V-C to supply your Triple Superphosphate needs. Newly-expanded facilities and years of skill in production now combine to bring you Natural-Texture Triple Superphosphate designed to fit your production programs. Write or call *now!*

VIRGINIA-CAROLINA CHEMICAL CORPORATION

401 East Main Street, Richmond 8, Virginia

VC PRODUCTS ®

Special Retail Section

Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

When Delilah cropped Samson's locks, the Biblical hero lost his strength. In other words, "He had a close shave."

The same thing happens to grass. If you remove too much of the grass top and do it too often, either by grazing or by clipping, the roots will quit growing until the tops recover.

The same thing happens to our plant food reserve. When agricultural prices are good, farmers do a better job storing plant food in the soil. When we have a surplus of plant food, that means the best insurance policy (economically speaking) a nation can have. However, on the other hand, when agricultural prices drop, farm people, through necessity, have to produce more, to buy the necessary consumer goods, and then is when we dig into and deplete our plant food reserve.

"It's a close shave" for any farmer when he depletes his soil of plant food. And it is a "close shave" for any nation when its agriculture can't produce a surplus. There are many nations today not producing enough good food. It's a "close shave" for business when agriculture loses its buying power. A prosperous solvent farm family buys and uses more consumer goods.

Mr. Business Man, what difference would it make, if the top soil of your trade area is 1 in. deep or 12 in., if it's sweet or sour, if the pastures will carry a milk cow or a beef animal per acre or if it takes four or five acres to do the job, if the pigs are fattened in a dusty or muddy pen or out on a good pasture fit for a good pig, if the old hens lay 96 eggs or 240 every 12 months, if there were no 4-H Clubs, FFA organizations, experiment stations and agricultural colleges?

Firm Donates Lab Equipment to Schools

CLINT, TEXAS — The Southwest Fertilizer & Chemical Co. has donated $5,000 worth of laboratory and chemical supplies to the chemistry and science departments of the Clint and Fabens high schools.

According to T. T. Flint, branch manager of the company at Clint, the equipment was originally purchased from a chemical plant located near the Gulf Coast.

Included in the supplies are benches, cabinets, glassware, sinks, Bunsen burners and a quantity of chemical reagents. Receiving the equipment were Fred Lampert, head of the science department in Clint High School, and Clay Cox, chemistry teacher at Fabens High School.

Facts About Wind Erosion and Dust Storms on the Great Plains

EDITOR'S NOTE: Recurring drouths in the Great Plains are a normal feature of that area. Wind erosion and dust storms that are companions of the drouth will always threaten this region, and unless good land use and soil and water conservation practices are adopted by all who till or graze that land, each drouth will cause bigger and worse "dust bowls." This article, prepared in pamphlet form by the Soil Conservation Service of the U.S. Department of Agriculture, relates the weather history of the Great Plains and tells what measures are effective in reducing the erosion that accompanies drouth.

Wind erosion and dust storms have become serious problems to people living on the Great Plains. Each major drouth of the last 60 years has brought widespread soil blowing. Twice within the last 25 years parts of the Plains have been called a "dust bowl." The normally high winds and recurring drouths will always threaten this region with the possibility of crop failures, dust storms and land damage by wind erosion.

Severe drouths have been coming to the Great Plains for centuries. Early explorers who crossed the Plains during wet periods usually wrote of the region as an ocean of lush grass. But explorers who crossed during drouths called it a desert. Most American maps made before 1860 labeled the region "The Great American Desert."

The southern Plains has had a major drouth about once every 20 years since the area was first settled by farmers in the 1880's. Prolonged drouth has not come to the northern Plains at such regular intervals; nevertheless, the northern Plains has had some severe drouths in recent times.

Drouths will recur and the wind will continue to blow, but "dust bowls" every 20 years or so can be avoided. Wind erosion and dust storms can be held in check. Proper land use and good soil and water conservation practices would prevent much of the damage to the land, crops, and people during these recurring drouths.

Early Drouths

The first extensive settlement of the southern Great Plains by farmers began the year after the great blizzard of 1886 killed many of the cattle on the big ranches. Settlement gained momentum until 1892. During this time much of western Kansas and many farms in eastern Colorado and western Texas were settled.

A drouth started over most of the southern Plains in 1890 and by 1892 was severe. As the drouth persisted the movement of settlers was mainly eastward from 1892 through 1895. Good rains came to most of the region during the latter 1890's. By 1899 settlement was again in full swing and continued for more than a decade.

Another long drouth began in 1910 and lasted through 1913 over most of the southern Plains. Most of western Kansas had been settled when this drouth began. Also, many farms in the panhandles of Oklahoma and Texas and eastern Colorado and New Mexico were settled. During this drouth, dust storms were probably worst in Thomas County, Kansas. Here, between 1912 and 1914 more than 65,000 acres blew severely—probably as severely as any area of similar size has blown since. But this was not the only area that had dust storms.

Most of the Plains had above-normal rainfall from 1914 to 1930. There were a few dry years and many local drouths. Parts of the southern Plains had a rather severe drouth in 1917-18, but settlement continued at an accelerating rate. By 1931 the sod had been plowed on much of the land suitable for cultivation and on about 5 or 6 million acres that were not suitable.

Settlement on the northern Plains from the 1880's to 1931 followed much the same trend as that on the southern Plains but was not so erratic. Drouths came to the northern Plains frequently but usually did not last so long. Also, the hot, searing winds of summer were not so severe. Fewer farmers abandoned their farms and returned East during the drouths. They had many trying times before the long drouth of the 1930's, but settlement proceeded westward across Nebraska, the Dakotas, Montana and Wyoming at a fairly even rate. By 1931 most of the land suitable for cultivation on the northern Plains, and some that was not suitable, had been plowed for cultivation.

First Dust Bowl

In the summer of 1931 another long drouth started on the Great Plains. This one persisted for more than

(Continued on page 13)

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

How much you sell is important—yes—but not as important as how much you make, an accountant told a trade gathering recently.

The accountant theorized that accounting ratios are valuable in analyzing a business, whether big or small in sales volume. He cited the instance where one business sold 400,000 units and another 5 million units. Yet the business that sold the 400,000 units realized $8,000 more income than did the larger-volume business.

The accountant said that he likes to think of a business as having three phases: (1) merchandising; (2) operating; and (3) the financial phase. In discussing the financial phase, he mentioned three important ratios:

First, there is the ratio of surplus net profits to net worth. He said that this is a key ratio and the measure of one's success in business. It is computed by dividing the net income for the year by the net worth at the beginning of that year. He said that the records show that the less efficient enterprises, based on this ratio, are rapidly going out of business.

Next, he described the ratio of surplus net profits to volume of business. He said that the volume of business should be considered on a per unit basis.

This ratio is computed by dividing the total net income by a convenient number of units. This will give the unit net income of the business.

This particular ratio is valuable in studying the trend of the business. It must be kept in mind, however, that a high net income per 100 units (or any convenient number of units) does not show any relationship to the capital investment of the firm.

The third ratio that he discussed was that of operating profits to volume of business. In computing this ratio, one considers operating profits before taxes and interest are deducted.

This ratio reflects the ability of management to do a good or poor job of running the business. A good ratio shows rapid turnover of inventory. It also indicates rapid receipt of cash receivables.

How Are Your Records?

Some other words of advice came from the accountant. Don't view your business as a hobby, he said. If you do you'll probably operate at, or below, the break-even point.

He cited the need for departmentalizing records so that they can be properly analyzed. In one industry, the hatchery trade, 63% of the firms cooperating in a survey had not departmentalized enough to make their records useful for analysis. All too frequently, he said, miscellaneous is the only classification used for expenses.

It was found further in the hatchery trade that 54% of the hatcheries showed an increase in volume of business in 1954. Of these, 38% showed less earnings. In other words, their expenses increased out of proportion to the increase in volume of business. In many cases this drop in earnings could be overcome by a constant review of, and attention to labor costs, he added.

Doing Business With Oscar & Pat

Pat McGillicuddy came in about 4 o'clock one afternoon in early fall. With a sigh he laid down some checks on Tillie Mason's desk. "Collecting's hard work," he said. "That's one time when farmers have a lot of excuses. But I managed to get $726. I kept at it. And got some orders besides."

He looked tired and worn as he sat at his desk, but after a while he seemed a little rested and began looking over some farm magazines. Oscar Schoenfeld, the thrifty partner in the firm looked up from his accounts, a queer little smile on his face. It was almost friendly, but not quite.

Pat saw Oscar and was puzzled. Finally, he said, "Oscar, is anything different with you these days?"

"Different?" echoed Oscar, shrugging his shoulders. "No, why?"

"Well, you seem sort of half gentle and half cross, that's why. Usually you're all crabby."

Oscar smiled mysteriously. "Oh, don't mind me," he said.

Puzzled, Pat went back to his magazines. Encouraged by Oscar's half human attitude, he said finally: "Oscar, I've got an idea, and—"

Oscar looked up so quickly, so eagerly, that Pat broke off.

"Yes," encouraged Oscar, his eyes bright. "What is it?"

"Oscar, what IS the matter?" asked Pat. "You ARE different."

Once more Oscar shrugged. "It is your imagination. This idea of yours. I'd like to hear about it."

Pat whistled. He had not had so much encouragement from Oscar in all their years in business. Usually Oscar tried to throw cold water on Pat's ideas before he got through explaining them. Now, Oscar was actually encouraging him to talk about his ideas. This was such a different attitude that Pat couldn't quite get used to it.

"Well," he said gently. "I'm glad you are willing to hear me out, Oscar. This is really the way I had hoped it would be with us all these years, each patiently listening to the other fellow's ideas, talking them out slowly, clearly. No arguments. No raised voices. Just good business talk."

"You had an idea!" Oscar reminded, almost smiling, but not quite.

Pat began to get a little enthusiastic. "Yes, I have been thinking about it for several days. It's a way to sell more fertilizers."

"And how?"

"Well, in this part of the state, Oscar, we have a lot of land in some spots that have unproductive pot-holes," he said, "and I read where the university has an automatic land leveler to get rid of them."

"Land leveler!" echoed Oscar. "And what does it do?"

"It levels out those pot-holes and forms a better surface drainage pattern," Pat explained. "The university men say that it removes storm water from a field 125 times faster than a good tile system. Experiments show that with lime and fertilizer this land smoothing helped pastures that had been low and wet to outyield regular farm land quite a bit."

"And so?" encouraged Oscar.

"I thought," Pat said, "that maybe we could work up farmer interest in the land smoothing around here, and get the university to stage an experiment. It could be a big day, and we could feed everybody and show movies on fertilizer. We could take pictures, and the newspapers might write it up. They'd mention fertilizer and lime, and our sales should go up from the publicity."

"Uh, huh!" Oscar said methodically. "Uh, huh!" He opened his desk drawer and pulled out a sheet of paper, made a few pencil marks on it.

Once more he looked up. Gone was that half friendly look; there was no encouragement in his face. "Do you know," he said sharply, "that that idea was the eleventh one you have mentioned to me in three months? Is this an idea factory or a fertilizer sales store? You tell me. I want to know."

Pat looked puzzled. His blue eyes were wide. "What do you mean, Oscar?"

"I mean you get too many ideas," Oscar snapped. "And ideas cost money when you carry them out. I killed six of those ideas in three months, otherwise we'd be broke. I wish I could have killed a couple more. But I have a new idea. I keep score of your ideas, I do. And that tells the story."

"The story?"

"Yes," growled Oscar, not noticing that Tillie Mason, the bookkeeper, had snatched an ulcer powder. "From now on every idea you mention I put it to the test before we try it."

"How can you do that?"

Oscar grunted victoriously. "Well, every idea you have I will ask: how complete is the plan? Will it interest customers and prospects? How many extra sales will it make for us? Will it bring more people to the store, and how many? How much does it cost in money? And how much time does it take, your time, mine and employees? That must all be charged against it."

Pat was aghast. He said nothing for a moment.

"Then," continued Oscar triumphantly, "after the sale is over I will make out a report on the costs, the gains or the losses. WE—you and I—will know just how much business those ideas bring in, or whether we lose our fertilizer sacks. I will have the records, I can tell you."

"Have you the results of other sales?"

Oscar looked distressed. "Only a couple," he mourned, "but from now on I'll have every penny down, you can bet on that. I'll throw them at you each time you come up with a promotion."

"Well," Pat said dubiously, "eleven ideas in three months does sound like a lot. Maybe I should cut down on them for a while."

"For a while!" echoed Oscar. "We could very well get along without new ideas for a year or two or more, so far as I am concerned. Let's get along with the ideas we have. They'll keep us too busy the way it is!"

Suddenly Pat began to roar. "Oscar, you've given me a tremendous idea," he said. "I, too, want to keep a record of what every promotion costs and the exact results it brings. Then I will know which are the profitable ideas and which aren't. It will make me a better idea man. I'll be more careful, and you'll like that, won't you?"

Oscar snorted. "Listen, McGillicuddy," he said. "No matter how careful you would be with this firm's money and merchandise, it would not be even anywhere near my record even on my most liberal day."

"That I know," Pat said. "Maybe one reason why we do such a good business is that farmers just can't figure out how two men who are as far apart as us can make a business go, and so they come here to see how we do it." And with that Pat got up, took his hat, said goodnight to Tillie and went home.

Oscar swung around in his swivel chair, looked at the clock. "It's only 5:29," he said. Then puzzledly, "I wonder what he meant by that last remark, Tillie?"

Tillie didn't answer for a moment. Then she said, "I really don't know, but I think he was mad."

"Good," snapped Oscar. "I'm glad he's mad. That means he'll think about what I said time and again. He won't forget it. This has been a good day. I wonder if Minnie has sauerkraut and wieners tonight. I feel just like having them."

Texas Researchers Continue Control Tests on House Fly

COLLEGE STATION, TEXAS — Research studies being made by Texas A&M College System entomologists are aimed at helping dairymen combat one of their warm weather enemies—the house fly.

In reporting on work done during 1954, Manning A. Price of the department of entomology, said the residual sprays were applied in many dairy barns in the College Station vicinity.

Malathion emulsifiable concentrate diluted to 1.25, 2.5 and 5% gave protection for 17, 37 and 42 days respectively. "A 2.5% spray appears to be the most economical concentration to use," said Mr. Price.

Chlorthion at a .5% concentration gave protection for 38 days while a 1.0% concentration increased protection to 42 days. Here again staining was a tendency but to a lesser degree than with compound 4124. "The .5% concentration appears to be the most economical to use," but he adds, "more information on its toxicity to higher animals is needed along with experiments on fly control before the insecticide can be recommended for general use."

Diazinon wettable powder at a .5% concentration gave protection for 71 days and a 1% concentration for 98 days (used in one barn).

Lindane emulsion at a .5% concentration gave protection for 24 days while a mixture of .5% lindane and .5% Archlor gave protection for 17 days. All sprays were applied to the point of run-off with a power spray at 150 lb. pressure per square inch.

Discovery of Cause Of Peach Virus Raises Hope of Better Control

SACRAMENTO—Gilbert L. Stout, chief of the Bureau of Plant Pathology, California Department of Agriculture, says that the recent discovery that a microscopic mite carries the virus of peach mosaic raises new hopes as to possibly more effective methods of control.

"Whether these hopes can be realized remains to be determined and depends on future research with respect to the life history and habits of the mite and possibly spray materials or methods of control," Mr. Stout said.

"This mite appears to be previously unknown to science and belongs to the group known as Eriophyid mites. It inhabits the peach tree buds, lives there during the winter, disperses in the spring and carries the virus to other trees. Since the mite is new, its geographic distribution is not yet known.

"This disease is known only in eight states — California, Arizona, New Mexico, Texas, Colorado, Utah, Oklahoma and Arkansas. It also occurs in Mexico, but is not known elsewhere in the world.

"In California it occurs only in the southern part, south of the Tehachapi mountains, in Riverside, San Bernardino, Los Angeles and San Diego counties. A federal, state and county cooperative control program has been in operation in California since 1936.

"Control consists of annual inspections of peach plantings and prompt removal of the diseased trees to destroy the reservoirs of the virus and prevent spread to healthy trees. Diseased trees never recover and this method of control, the only one known, is severe and expensive.

"During the last 20 years in California approximately 116,000 mosaic affected peach trees, or the equivalent of about the number of trees on some 1,200 acres, have been destroyed by removing the trees to prevent further spread. At present, we are losing 1,000 to 2,000 trees per year, even with the control program.

"Other stone fruits, such as almond, apricot, nectarine, plum and prune also can be infected but the damage to them is less severe than to the peach. Cherry trees are immune."

Oregon Weed Kill Tests Show Promise

CORVALLIS, ORE.—Scientists at Oregon State College have been testing two types of selective weed killers that look quite promising for control of such annual grass and broad-leaved weeds as pigweed, annual blue grass and purslane.

William R. Furtick, in charge of the experimental work, says that when applied properly the chemicals shouldn't harm the crop. Used as a spray, the chemicals are applied directly to soils after planting and prior to the time the weeds come up. Rates vary from 3 to 12 lb. per acre.

The weed killers belong to two different groups of chemicals, chloro-acetamides and thio-carbamates. Their commercial value will depend upon their cost per acre, and whether or not they are effective under a wide range of conditions.

Mr. Furtick emphasizes that further tests are necessary before the chemicals can be released for general use.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Don Paarlberg, USDA economist, took initiative to refute talk about a "farm depression." In a speech made in New England, he brought out facts and figures indicating that farmers are not slipping in net income.

U.S. Department of Commerce reports that the farm chemical industry is in good condition, based on relatively low inventories in the face of record production. . . . Two phosphate plants, those of Virginia-Carolina Chemical Co. and Armour Fertilizer Works, reopened at Lakeland, Fla., following settlement of wage dispute which had closed the operations since June 1.

Diamond Black Leaf Co. moved to Cleveland, Ohio, from former office in Richmond, Va. . . . McLaughlin Gormley King Co., Minneapolis, announced the opening of a New York office as part of its expansion program. Nathan D. Troot will head the branch.

Russell B. Stoddard and R. H. F. Dade were named to new positions by Food Machinery and Chemical Corp. Both are associated with the Fairfield Chemical Division. . . . Phytopath group and Ohio Pesticide Institute met at Wooster, Ohio for three-day meeting. . . . H. H. Allen, retired executive of Semis Bro. Bag Co., died Aug. 13; and Dr. William Hale, farm chemurgy exponent and formerly Dow Chemical Co. executive, died Aug. 8.

USDA hinted that because of a larger-than-expected cotton crop this year, further acreage reductions may be necessary, effective next season. A total of 17 million acres may be planted, as compared to 18 million this year. . . . The Food and Drug Administration reported that chemical firms have a tendency to request tolerances higher than may be allowed safely.

Shell Chemical Corp., New York, announced a reduction in the price of its soil fumigant, D-D, from $1.20 a gallon to $1. . . . Strikes against Heyden Chemical Co. and American Agricultural Chemical Co. were ended on Aug. 8.

Gen. J. E. Hull, USA, retired, was elected president of the Manufacturing Chemists' Assn. He had served in the U.S. army for 37 years, holding many responsible posts.

Lion Oil Co. reported a gain of 29% over the first half of 1954. Income for first six months of 1955 was $7,816,987 as compared to $6,067,300 last year. . . . Dow Chemical Co., Midland, Mich., also reported a new sales record for its 1955 fiscal year. The new figure was $470,742,000 as compared to sales of $428 million made last year.

Food and Drug Administration assigned tolerances to two pesticidal materials, heptachlor and captan. Residues of 0.1 and 20 ppm respectively, were allowed. . . . An opportunity for added sales volume was seen in the cotton acreage allocation situation. Some 18 million acres of cotton are expected to be planted for next season.

U.S. Potash Co. approved expenditure of $8 million for exploration leading to greater output from its mines near Carlsbad, N.M. . . . Nichols Fertilizer & Chemical Co. purchased the Oklahoma Fertilizer & Chemical Co., Oklahoma City. . . . The American Potash Institute, Washington, D.C., announced that deliveries of K_2O during the fiscal year of June, 1954, through May, 1955, totaled 2,164,997 tons, a new record. The figure was 8% greater than the previous fiscal year record.

Stauffer Chemical Co. announced that its expanded captan plant in Perry, Ohio, is now in operation. With the added output, the plant's annual production is rated at 12 million pounds a year. . . . Richard F. Brown was named a vice president and general works manager of Spencer Chemical Co., Kansas City, Mo.

William B. Porterfield, Jr., was named vice president of National Potash Co. He was formerly associated with U.S. Potash Co., New York. . . . Wallace C. Gordon was named director of advertising for E. I. duPont de Nemours & Co., Inc., Wilmington, Del. He was formerly with duPont's Grasselli Chemicals Dept. as assistant director of sales.

Directors of Monsanto Chemical Co., St. Louis, and Lion Oil Co., El Dorado, Ark., signed an agreement of merger of Lion with and into Monsanto. Stockholders of the two companies will vote on the proposal Sept. 23. . . . The anhydrous ammonia industry is operating at only about one fourth of its potential, speakers said at the meeting of the Great Plains Anhydrous Ammonia Assn.

Monsanto Chemical Co. announced it will market agricultural chemical formulations under the Monsanto label in a 15 state midwestern area beginning in 1956. . . . Southwest Agro Chemical Corp. said it will build a $2½ million plant at Chandler, Ariz. for production of anhydrous ammonia and other nitrogen products.

A survey conducted by the Agricultural Ammonia Institute indicated that use of anhydrous during the first five months of this year is 17% greater than during the corresponding period a year ago.

Formation of Phillips Pacific Chemical Co., which will erect an ammonia fertilizer plant in southeastern Washington, was announced by Phillips Petroleum Co. and Pacific Northwest Pipeline Corp., which will jointly own the newly-formed firm. . . . Shell Chemical Co. announced plans to build a new urea plant at Ventura, Cal.

The Food & Drug Administration extended the effective date of the pesticide tolerance amendment to Oct. 31. The former deadline was July 22.

FARM SERVICE DATA

Extension Station Reports

Nitrogen fertilizer can increase the efficiency of water for meadow hay crops, according to Colorado A&M scientists.

The scientists have been experimenting on test plots on the James McDowell ranch near Garo, Colo., for the past year in an effort to increase yields with little rainfall.

Colorado and U.S. Department of Agriculture scientists increased hay yields last season by two to four tons after applying nitrogen. Crude protein in the hay also was increased.

Hay grown under ordinary management with no fertilizer produced 300 lb. crude protein per acre. When 160 lb. actual nitrogen was applied per acre, crude protein content jumped to nearly 600 lb. per acre.

With an extremely heavy application of nitrogen . . . 480 lb. actual . . . crude protein reached 1,000 lb. per acre in the four tons of hay produced.

★

Vegetable crops are generally heavy users of plant food, which should be regularly placed in the soil to maintain fertility, says the California Fertilizer Assn. While vegetable crops vary as to their plant food requirements regular use of adequate amounts of the proper fertilizers containing nitrogen, phosphate and potash can mean the difference between profit and loss to vegetable growers.

Lettuce utilizes about 55 lb. nitrogen, 20 lb. phosphoric acid, and 100 lb. potash per acre (based on production and harvest of about 480 four dozen crates). Tomatoes consume 100 lb. nitrogen, 35 lb. phosphoric acid and 170 lb. potash to produce a 10-ton crop.

Fifteen tons of cabbage require 100 lb. each of nitrogen and potash, and 25 lb. phosphoric acid. Irish potatoes require 250 lb. nitrogen, 70 lb. phosphoric acid and 340 lb. potash in producing 360 bags on an acre of soil. Celery requirements to produce 350 crates are 80 lb. nitrogen, 65 lb. phosphoric acid and 235 lb. potash.

★

The possibility of such chemical weed killers as 2,4-D being used to clear unproductive rangeland of unwanted brush, is being studied on two farms near San Francisco.

The chemical is sprayed by helicopter on coyote brush, scrub oak, poison oak, and other non-economic growth in order to reclaim the land for pasture and natural grasses. After two years it has been noted that there has been about a 75% kill of the brush, with a small amount of regrowth. Respraying may be necessary, but the eventual outcome, midway in the experiments, appears to be complete removal of the brush inside of four years. The reclaimed land can then be reseeded and used for productive crops.

Trying to remove the brush by caterpillar tractor is far more expensive because of the difficulty of uprooting the brush, according to farmers experimenting with the chemical spray. Burning the land is not too effective, and at the times of year when it would be most effective fire laws prohibit brush burning.

A similar experiment also demonstrates that removal of the brush from hillsides by chemical spraying from the air also permits better irrigation of the farmland below from natural streams. This factor is of great importance in California where there are no rains for about six months of the year and irrigation during this dry season is invaluable to crops.

★

Heavy pumping from underground wells in the Rio Grande Valley has increased the salt content of the water, according to tests made by the Lower Valley Experiment Station and the Bureau of Reclamation. Altogether they tested 450 wells in this area to determine the quality of irrigation water farmers use.

There is much variation in the water from various localities. The saltiest water was found in Hudspeth County where the average is as high as 6.18 tons of salt per acre foot of water. The lowest salt content was from the wells near Ysleta with only 2.38 tons per acre foot.

In checking trends, the station rechecked 40 wells which had first been tested in 1951. Results show that 34 had increased in the salt load while six had decreased. The over-all increase in the 40 wells was over 30% more salt.

★

Use of pentachlorophenol as a wood preservative on the farm increased about 51% nationally in 1954 compared with the previous year, reports Vernon Burlison, University of Idaho extension forester. Farm use of penta long has been recommended by the University of Idaho. In fact, research in Idaho was a big factor in first turning the spotlight on penta as a sure and easy way to make fence posts and building timbers last longer. The story of how penta can make farm wood products last longer is contained in Idaho Extension Bulletin No. 187 "Cold-Soak Wood Preservation."

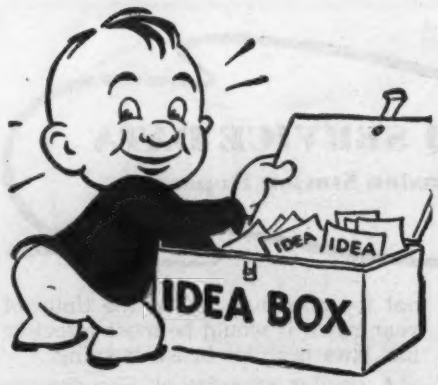
★

Uninjured potatoes mean money in the grower's pockets.

Idaho Agricultural Bulletin 220 (Effects of Mechanical Injury Upon the Storage Losses of Russet Burbank Potatoes), points out that sound potato tubers do not rot. Therefore, to reduce storage losses the grower must reduce injury by slowing down digging and handling operations and handle potato tubers like eggs—carefully.

The more rapidly and roughly the grower harvests his potato crop, the more money it loses. It is much better to carefully harvest 90% of a total crop than to harvest 100% of the crop and cut and bruise 15 to 20% during harvesting and handling operations, the bulletin states.

Carelessness in digging, hauling, piling and handling damages more than 10% of Idaho's potato tubers every year. These bruised tubers rot during storage. In a 7,000-sack harvest the growers can lose 700 sacks of potatoes through careless handling. At only 50¢ per sack $350 is lost.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6297—Chemical

Acetonedicarboxylic acid, a well-known, highly reactive chemical, is now available in pilot plant quantities by Chas. Pfizer & Co., Inc. Designated by the company as ADA, the compound is derived from fermentation-produced citric acid. A white crystalline powder of high purity, ADA is seen useful industrially for the preparation of insecticides, disinfectants, fungicides, dyestuffs, chelating agents, amino acids, leavening agents and as a synthetic intermediate. A comprehensive data sheet and samples are available upon request. Merely check No. 6297 on the coupon and mail it to this publication.

No. 6298—Lime Manual

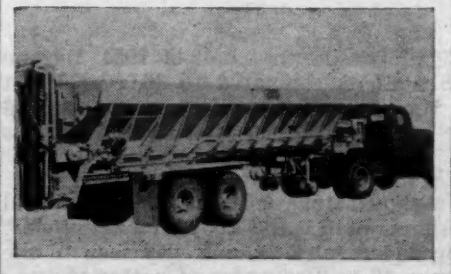
A reference manual concerning the manufacturing processes, applications and specifications of lime and lime products has been announced by the Ohio Lime Co. The 28-page, 4-color book traces lime production from the open quarry where it is mined, through various production processes, to application and specifications that govern the correct methods of their use. Company officials say over two years were spent collecting, editing and producing the reference manual. The brochure is being distributed free of charge. Check No. 6298 on the coupon and mail it to this publication to receive it.

No. 5250—Bag Closing Tape

A new aid to those who store or handle products normally contained in multiwall bags has been announced by the Chase Bag Co. The inventory aid is a smooth-finish tape in a wide variety of colors, which is sewn across the bottoms of multiwall bags as a "closing" tape. In the case of sewn valve multiwall bags, closing tapes are used on both tops and bottoms of bags. The new colored tape, called "Flattertape," is said to serve as a ready identification of the bag contents when bags are stacked and the printed surface of the bag is not visible. Other advantages claimed are the improved printing surface and the availability of colored inks to contrast with the tape. Natural kraft tape is also available in the same texture. The new tapes will be available for all customers who prefer them to the usual crepe-type tapes. It was announced that the tapes will lower cost to the user. For more complete details check No. 5250 on the coupon and mail it to this publication.

No. 6299—Bulk Transport

The Henderson Manufacturing Co. has under production a bulk fertilizer delivery unit called the Henderson Chief Bulk Transport. Designed for one-man operation, the unit self-unloads into spreaders and also permits spotting the transport at any job, freeing the truck-tractor to pick up another transport load. The transports are available in lengths from



18 to 36 ft. A 14-ft. swivel conveyor swings in a 156° arc around the back of the transport. Advanced Hydra-Mech action raises, lowers or folds the conveyor vertically for over-the-road transport. The streamlined hopper is corrosion-resisting all steel welded construction, with rounded front, tarpaulin hooks and catwalk. Rear feed gate opening is hydraulically operated. The entire door can also be swung open to handle other materials. The unit is equipped with a 15 h.p. Wisconsin motor and extra-heavy-duty chain (with oiler) to drive the conveyor belt. Check No. 6299 on the coupon and mail it to secure more complete information.

No. 6300—Catalog

Antara Chemicals, sales division of General Aniline & Film Corp., has published an "Organic Chemical Catalog," which is one of a series of brochures describing Antara's products. The organic chemicals listed are produced in commercial or semi-works quantities. In the catalog's index, each product is listed alphabetically under its chemical abstracts name and most common synonyms. In the data section, the chemicals are alphabetically arranged under the designation normally used by Antara. The products are described, minimum standards governing shipment are set forth, and hazards, when present, are listed. A copy may be obtained by checking No. 6300 on the coupon and mailing it.

No. 6301—Literature Checklist

The Diamond Alkali Co. has published a checklist of literature which it has published and is available to readers. The list of literature o Diamond chemicals and their use was first prepared for the company' sales staff but distribution has bee expanded. The available literatur includes reference manuals and hand books, technical bulletins and dat sheets and product folders and lea lets. Secure the checklist by markin No. 6301 on the coupon and droppin it in the mail.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6287—Liquid Fertilizer

The Schrock Fertilizer Service ha announced an addition to its fertiliz line. The product is a liquid fertiliz called Liqui-Green with Leafton and is said to contain a balanced com bination of nitrogen, phosphate an potash as well as trace elements suc as sulphur, magnesium, boron, zin cobalt, iron, copper, molybdenum an manganese. Leaftone is said to be chemical additive to facilitate bett leaf absorption and prevent burnin One gallon of the product can b used with 50 gallons of water. Fift five gallon drums are available. Sma sizes for retail sales will also be avai able, according to the company. S cure more complete details by chec ing No. 6287 on the coupon and dro ping into the mail.

No. 6292—Fly Repellent

The Residex Corp. is now marke ing a new Crag repellent formul tion for biting flies on beef and dai cattle. Resipel, as the product called, combines Crag fly repelle and methoxychlor. One application claimed to keep dairy and beef catt free of horn flies, stable flies, hor flies, house flies, mosquitoes and gna for well over one week—in both bar and pasture. The product, a liquid, diluted with water before use a applied directly to the animal's hid It may be sponged on or applied wi any normal spray equipment. It c also be used on back rubbers and treadle sprayers. Resipel is now ava able at leading local agricultur dealers. Secure more complete d tails by checking No. 6292 on t coupon and mailing it.

No. 6283—Aerosol Film

"The Spray's the Thing" is the ti of a new color film about aeroso produced by the E. I. du Pont Nemours & Co. (Inc.). The animat 16 mm. color film shows how t aerosol insecticide ("bug bomb principle can benefit a typical fami It runs 13½ min. To secure more i formation about the film check N 6283 on the coupon and drop it the mail.

No. 6285—Sprayer

Two items have been added to t tractor mounted and Estate spray lines manufactured by the F. Myers & Bro. Co. The extended li includes a three point hitch tract mounted sprayer and the Myers Ban net, a wheelbarrow type pow sprayer. The three point hitch tra tor mounted sprayer is designed f handling the wide range of chemic materials needed for weed, insect a

Send me information on the items marked:

☐ No. 5222—Catalog	☐ No. 6292—Fly Repellent
☐ No. 5232—Process Control	☐ No. 6293—Heptachlor Booklet
☐ No. 5250—Closing Tape	☐ No. 6294—Spreader
☐ No. 5253—Hand Trucks	☐ No. 6295—Leak Detector
☐ No. 6279—Pump	☐ No. 6296—Booklet
☐ No. 6283—Aerosol Film	☐ No. 6297—Chemical
☐ No. 6285—Sprayer	☐ No. 6298—Lime Manual
☐ No. 6286—Thiophene	☐ No. 6299—Bulk Transport
☐ No. 6287—Liquid fertilizer	☐ No. 6300—Catalog
☐ No. 6291—NH, Speedometer	☐ No. 6301—Checklist

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sease control programs. A du-All ray pump provides pressures up to 0 lb. a sq. in. with discharge ca- acity of 6 gal. a minute. Secure ore complete details by checking o. 6285 on the coupon and mail- g it.

No. 5222—Equipment Catalog

Just off the presses is the new 55-56 catalog of the Seedburo quipment Co. which illustrates and escribes, according to the company, ne of the largest lines of grain, ed and seed testing, grading and andling equipment ever offered to he trade. More than 200 pages of olored illustrations and descriptions re included in the book. A copy may e had by circling No. 5222 on the oupon and dropping it in the mail.

No. 6286—Thiophene

Sharples Chemicals, Inc., a sub- diary of Pennsylvania Salt Manu- acturing Co., has announced it is ow supplying commercial quantities f thiophene for use in the manufac- ure of dyes and pharmaceuticals. hiophene is expected soon to be used n agricultural chemicals and other roducts, the firm states. Samples nd a technical bulletin on thiophene re available by checking No. 6286 n the coupon, mailing it to Croplife.

No. 6294—Fertilizer Spreader

The Simonsen Manufacturing Co. nnounces the production of a bulk ertilizer spreader designed for use n high analysis fertilizer. The preader has stainless steel compon-

nts at various vital locations and mploys stainless steel wire belt in onveying the fertilizer to the hy- raulically operated distributing fan. ecure more complete information by hecking No. 6294 on the coupon and ailing it.

No. 6296—Chemicals Booklet

"The Story of the Chemicals You ive By" is the title of a 24-page ooklet published by the Diamond lkali Co. It outlines how the com- any's chemicals are used in the gricultural chemicals field as well s in other industries. A section is evoted to "plants on parade," and hows pictures of the various com- any plants. The "behind the scenes" ection shows pictures and descrip- ons of how the chemicals are pro- uced. Secure the booklet without harge by checking No. 6296 on the oupon and dropping it in the mail.

No. 5253—Hand Fork Trucks

The "Hi-Low Stacker," a line of attery-powered, tilting fork hand rucks in 1,500, 2,000, 2,500 and 3,000- . capacities, 24-in. load center, has een added to the "Powrworker" se- es of hand trucks manufactured by e Clark Equipment Co. Equipped ith telescopic channel uprights, the rk truck provides a free lift of 64 with an 83-in. overall height and maximum fork height of 130 in. For ighway truck loading, an overall eight of 68 in. is also standard and rovides a free lift of 49 in. with a maximum fork lift of 100 in. For further information check No. 5253 on the coupon and mail it to this publication.

No. 5232—Process Control

An electronic "watchdog," which is claimed to make it possible to test and control continuously an unlimited number of industrial processes from a single vantage point, has been developed by Fielden Instrument Division of Robertshaw-Fulton Controls Co. The new instrument, called an indicating scanner, monitors a variety of process variables involving level, temperature, thickness, mechanical movements, tolerances, weight and pressure. It will keep a steady check on six, 12, 24, 48 and more steps in a manufacturing process, the company says. Additional information may be obtained by checking No. 5232 on the coupon and mailing it to this publication.

No. 6291—NH_3 Speedometer

New literature has been made available by the Stewart-Warner Corp. on a speedometer designed to be used for the application of anhydrous ammonia (NH_3) or any fertilizer, insecticide or weed killer. The unit registers over-the-ground speed in miles per hours and any variation in speed is immediately reflected in the reading. It registers distance traveled in miles and can be installed on any wheel tractor, fertilizer or spray rig, or on any slow moving farm machinery. To secure the literature, including price information, check No. 6291 on the coupon, clip and mail it to this publication.

No. 6293—Heptachlor Booklet

A new, pocket-size booklet showing cotton insects in natural color is now available. The booklet which shows the boll weevil, cotton flea hopper, thrip, rapid plant bug, tarnished plant bug, cutworm and armyworm contains valuable information on cotton insect control, the use of heptachlor formulations and the rates of application, according to its publisher, the Velsicol Corp. Check No. 6293 on the coupon, clip and mail it to secure the booklet.

No. 6279—Pump

Hypro Engineering, Inc., is marketing a portable pump weighing 26 lb., complete with motor, hinged carrying handle and a vacuum switch that permits untended operation. Its capacity is up to 5 gal. per minute with pressure up to 30 lb., and it is said to handle clean or dirty water with a minimum of clogging. It lifts water up to 10 ft. unprimed or 22 ft. primed. Secure more complete details by checking No. 6279 on the coupon and mailing it.

No. 6295—Ammonia Leak Detector

A new pocket-size device for detecting ammonia leaks is being offered to ammonia users by the Nitrogen Division of Allied Chemical & Dye Corp. The device may be obtained free of charge by circling No. 6295 on the coupon which appears elsewhere on this page and returning it to this newspaper.

PATHOLOGIST RETIRES

MOSCOW, IDAHO — Charles W. Hungerford, head of the department of plant pathology at the University of Idaho, retired recently. He was known throughout the state for his research on bean diseases, which is credited with helping to save Idaho's $20 million a year bean industry.

WIND EROSION FACTS

(Continued from page 9)

seven years on the southern Plains and for five years on the northern Plains.

Dust storms did not become serious until the fall of 1933, two years after the drouth started. But wind erosion and dust-filled air became worse each year over all the Great Plains until the Fall of 1936 and over most of the southern Plains until the Fall of 1938. Millions of acres of land were severely damaged by wind erosion. Many fields lost from 2 to 12 inches of topsoil. Some sandy land became sand dunes. Thousands of farmers abandoned their farms and left the Plains. It was during this period that the nation's journalists named the southern Great Plains the Dust Bowl. Some included the entire Plains area in this label. A few pessimists argued that the whole region should be planted to grass. During the Dust Bowl years and the following years, several million acres of eroded and abandoned cropland were converted to grassland.

Good rains came again, as they had after each previous drouth. From 1940 through 1949 most of the Plains had above-normal rainfall. There were some dust storms, of course. Many unprotected fields blew each Spring, especially in the sandy-land cotton country of western Texas and eastern New Mexico. A few dust storms were regionwide. But wind erosion and dust-filled air were mainly local problems during this wet decade. Good yields and high prices for both wheat and cotton were the rule.

Many new settlers came to the region in the 1940's to occupy farms that had been abandoned during the 1930's or to plow up land on the western fringes of the old Dust Bowl. The crop failures and dust storms of the 1930's seemed past history. Many of the new-comers and some old-timers began to think that good rains and bumper crops were normal. They plowed up a lot of the remaining grassland; altogether, about 4 million acres were plowed in the southern Plains between 1942 and 1952. At least 3 million of these acres were not suitable for permanent cultivation; they were either in the dry area with thin soil west of the old Dust Bowl or had sandy soil that blew readily. The plow-up of grassland in the northern Plains was not so great during this wet period. Yet hundreds of thousands of acres unsuitable for permanent cultivation were plowed.

Drouth Returns

Drouth returned to the southern Plains in the early 1950's. It started in southwestern Texas and southeastern New Mexico in the summer of 1950. By 1951 it had spread to most of the southern Plains; in 1952 all the Plains region was gripped by drouth. Over most of the northern Plains the drouth lasted only one year. But it persisted through 1953 and 1954 over most of the southern Plains.

Soil blowing was severe in the sandy-land cotton country of western Texas and eastern New Mexico in the spring of 1953. Sand dunes, 20 to 30 ft. high, were piled up on many fields. But dust storms did not become severe in the wheat-growing section to the north until 1954. Some unusually high winds in the spring of 1954, however, blew several inches of topsoil off nearly all unprotected fields from southwestern Nebraska and northeastern Colorado to western Texas and southeastern New Mexico. By the fall of 1954 probably more land was in condition to blow than at any previous time in the history of the Plains. Severe blowing in early 1955 led national news agencies to again label the southern Plains a Dust Bowl.

Drouth is an important factor in causing wind erosion and dust storms. But drouth alone does not cause severe wind erosion. Soil blowing occurs only when high winds come in contact with loose, unprotected soil. Fields that are well protected with vegetation will not blow severely regardless of how dry it gets, except when nearby blowing fields ruin the protective vegetation.

Most soil blowing starts on poor cropland. Land-capability surveys show that more than 14 million acres of the cultivated land of the Great Plains has a thin layer of soil or is sandy, or receives so little rainfall it is not suitable for permanent cultivation. This land should never have been plowed. It produces profitable crops only during wet years. Crop failures are common during drouths. When a drouth persists for two or three years the vegetation and organic matter in the surface soil are usually exhausted. Then the soil starts to blow every time a high wind comes.

All soil blowing does not start on cropland that is not suitable for cultivation, however. Sometimes it starts on good cropland that has been improperly farmed. Or it may start on rangeland that has been severely overgrazed, especially where sandy soils prevail.

When wind erosion once starts it tends to spread from field to field and farm to farm. The wind carries loose soil particles across field and farm boundaries. Where a soil particle strikes bare ground it blasts loose other particles which, in turn, are swept across the ground surface and cause still further erosion.

The blowing soil particles may cut off tender, growing plants at the ground surface. Or they may cover both growing and dead vegetation with drifts and hummocks of dust or sand. When the growing plants are cut off, the soil is likely to blow with the next high wind. Likewise, a field covered with drifts or hummocks of loose soil will probably blow seriously during the next windstorm. If high winds come frequently for several weeks or months, the soil blowing that started from a few fields may spread over an entire community.

What Can Be Done?

The conservation programs worked out by farmers and ranchers with the aid of the U.S. Soil Conservation Service, state agricultural colleges, and other agencies proved effective in controlling wind erosion in the Dust Bowl of the 30's. With a few modifications, the same measures are still advocated.

The more than 400 soil conservation districts in the Great Plains cover 90% of all farms and ranches of the region and are well organized to combat wind-erosion problems. Each district has its own long-range conservation program for prevention of wind erosion. And each district has an emergency program for checking soil blowing on fields where it starts.

But too few farmers and ranchers have been following the long-range program of their soil conservation district. And many have failed to follow the recommended emergency measures when their land started to blow. Hence, the soil blowing from their fields and pastures has greatly damaged nearby crops and land of conservation-minded farmers and ranchers.

The long-range conservation programs and emergency measures vary from area to area and district to district, depending on such factors as

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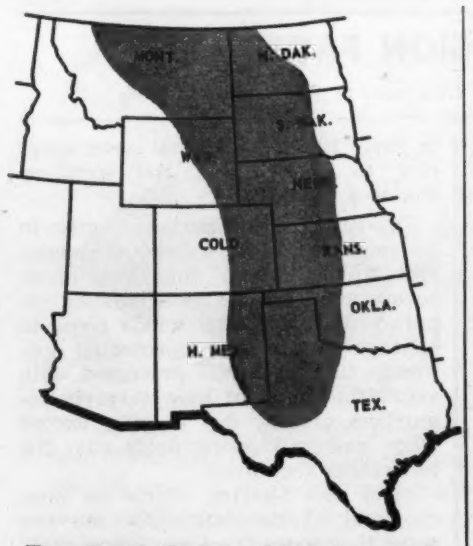

The Great Plains, showing area in which drouth is a continual problem.

the capability of the land and the type of farming. Even within one district they may vary. The basic principles for these programs are the same, however, for all land in the Great Plains that is subject to wind erosion.

Long-Range Programs

Any long-range conservation program must provide for using each acre within its capability and for treating it according to its needs for protection and improvement. To carry out this program on the Plains, considerable change in land use must be made in some areas and better soil-, water-, and crop- and range-management practices generally adopted.

About 14 million acres not suitable for permanent cultivation are now being cultivated on the Great Plains. Nearly all this land is subject to wind erosion during prolonged drouths, some of it blows every year. Part is sloping land and is also subject to water erosion during heavy rains. All of these 14 million acres should be converted to permanent grassland as soon as feasible. Converting poor cropland to grassland can be done economically, however, only during periods of normal or above-normal rainfall.

The Great Plains is one of the important agricultural regions of the U.S. It need not become wholly a grazing region. More than three fourths of the present cropland can be cultivated safely if soil and water conservation measures are used and cropping systems are planned as though every year might be a drouth year.

There is still a little grassland that is suitable for cultivation. Using this grassland for cultivated crops would help offset the conversion of poor cropland to grassland. It is important, however, that no grassland be plowed except where soil surveys show it suitable for permanent cultivation. Once the sod is broken, it is difficult and often expensive to reestablish grass on a field, especially during drouths.

Land Management

Tillage methods and cropping systems should be changed on many farms to reduce wind-erosion hazards. And better water-conservation practices are needed on many farms.

Stubble mulching and other tillage methods that leave crop residues on or near the ground surface should be used on all cultivated fields. In the spring-wheat area of the northern Plains and on land that is to be fallowed in the winter-wheat area, it is usually best to wait until Spring to till the stubble. Crop residues on the ground surface help protect the soil from the force of high winds. They also improve soil structure, which allows water to soak into the soil more readily.

Winter cover crops are needed on most cotton fields subject to erosion. Most large fields that are likely to blow need strips of sorghums or other wind-resistant crops. More sorghums and other wind-resistant crops should be grown in rotation with wheat and cotton crops. But the crop rotations need to be flexible and adjusted to seasonal variations of moisture. Most farms need more feed crops to relieve grazing pressure on grasslands, growing wheat and sorghum stubble.

Water is the lifeblood of Plains agriculture. Seldom does this region get too much rain. Water conservation will pay even during the wet seasons. It may mean the difference between success and disaster during drouths. In addition to stubble mulching and other tillage and cropping methods that conserve water, many sloping fields need contour tillage, terraces and other water-conserving structures. Some sloping fields may need grass waterways to dispose of runoff.

Most of the irrigation water for the southern Plains comes from wells. Water is being pumped from the ground much faster than it is replenished in most areas. Hence, irrigation practices that use less water would help. Restrictions or regulations on the drilling of new irrigation wells are needed in some areas.

The main objective of a rangeland-conservation program should be to restore and maintain the best possible plant cover the soil and climate will support. To do this, livestock grazing should be adjusted to forage supplies, year by year and season by season. It is especially important to reduce livestock numbers during drouth periods when forage supplies are short.

Some ranges need improvements, such as additional livestock-watering places. Others need more fencing so that livestock can be rotated or can be kept out of pastures during critical periods. Water spreading, pitting, gully control and other water-conserving measures would improve many ranges. Likewise, brush eradication and reseeding of grasses are needed on much rangeland. Reserve feed supplies of hay, silage, or stacked feed are an essential part of a range-conservation program; this helps relieve grazing pressure on the ranges during drouths.

Emergency Measures

A long-range conservation program will seldom stop soil blowing if the program is started after drouth is already underway. Farmers and ranchers with unprotected and blowing fields must adopt temporary, emergency measures to bring the land under control while a long-range program is being installed.

Rain does little to stop soil blowing, except to furnish moisture to grow a plant cover or to make emergency tillage more effective. A blanket of snow will prevent blowing during the winter. But few bare fields of the southern Plains ever get that kind of snowfall. Snow usually falls during blizzards and is blown into drifts. This leaves most of the ground bare except where vegetation helps to hold the snow where it falls. In other words, rain or snow alone does not check wind erosion. Positive measures must be used.

Temporary measures for checking soil blowing are of three main types: (1) emergency tillage, (2) emergency plant cover and (3) reducing grazing.

Emergency tillage may check wind erosion on some fields if done properly and at the right time. But it can give only temporary relief. Therefore, it should be used only in emergencies as a stopgap until a plant cover can be grown. In some cases repeated tillage has prevented serious land damage for a whole season; in other cases it has been effective only for a few days or a few hours.

Emergency tillage should be used only on fields where clods or heavy, moist soil can be brought to the ground surface. If used on loose, dry soils it may do more harm than good.

Chisels and listers are most commonly used for emergency tillage. But any implement that brings clods or moist soil to the ground surface may be used. Tillage should be started as soon as a field starts to blow. On nearly level land the furrows are plowed across the path of prevailing winds. On sloping fields, they are plowed on the contour. Normally the plowing should be in strips with unplowed strips between. This permits later tillage of the unplowed strips.

A plant cover should be established on blowing land at the first opportunity. Emergency cover crops must be planted as soon as there is enough moisture to start their growth. Weeds that grow on a blowing field should be protected until enough rain falls to grow a cover crop.

Grain sorghums, sweet sorghums, Sudan grass, broom corn and millet are the best cover crops for the southern two thirds of the region. They may be planted any time there is enough moisture in the soil from Spring to early Fall. Wheat, barley and rye may be used as emergency cover if Fall rains are adequate.

A lot of rangeland is damaged by soil blowing onto it from nearby cropland. But during drouths some rangeland blows because of heavy grazing, especially where sandy soils prevail. Grazing should be avoided on blowing rangeland, if at all practical.

Grazing should be kept to a minimum on growing wheat and other winter cover crops during drouths. During the Winter, sorghum stubble and other protective vegetation on fields that are subject to blowing should be grazed lightly, or not at all.

Conservation Pays

Many farmers and ranchers throughout the Great Plains have been practicing good soil and water conservation measures since the Dust Bowl of the 1930's. Most of them fared much better during the drouth of the early 1950's than did their neighbors who failed to practice conservation.

Yet some conservation farmers followed the best land use and conservation practices and still saw their crops and land seriously damaged by the careless farming practices of their neighbors. This points up the fact that wind-erosion control must be carried out on a community or regional basis to be most effective.

Dust storms and wind-erosion damage would have been much worse during the early 1950's without these conservation farmers and ranchers. But the fact remains that there were not enough of them.

All the peopel who till or graze the land in the Great Plains must adopt good land use and soil and water conservation practices and plan for recurring drouths if this region is to have a permanent and profitable agriculture. The alternative is bigger and worse "dust bowls" with each succeeding drouth. And there will be more drouths, because drouth is a normal feature of the climate in this region.

BUILDING TO BE REMODELED

BERKELEY, CAL. — The 38-year-old administration building at the Citrus Experiment Station of the University of California in Riverside will be remodeled extensively, acccording to a recent announcement by the University. Laboratories constructed in 1917 will be altered to meet the needs and safety requirements of modern agricultural research, according to Dr. A. M. Boyce, director of the station.

Fertilization Aids Colorado Land to Quadruple Yield

HAYDEN, COLO. — Beef-carrying capacity of meadowland near Hayden, Colo., has been quadrupled in the past three years, according to Colorado A&M College and U.S. Department of Agriculture scientists.

The meadows are on the Ferrington Carpenter ranch east of Hayden. More than 150 northwestern Colorado ranchers toured the meadowland last month to see and hear results of the scientists' efforts to improve the meadowland.

Scientists told the field-day visitors that just three years ago, four acres of the meadow would support only one cow and a calf for a year. Now, after careful attention to water management, fertilization and other management practices, four acres will support four cows and four calves.

The research men put this increase in production on a dollar-and-cents basis. With beef at 20¢ lb., the average mountain meadow produces about $28 worth of beef per acre, they said. With higher producing grasses, better irrigation practices and fertilizing with nitrogen, this could be stepped up to $105 worth of beef per acre.

The field day speakers pointed out that these higher returns could mean greater efficiency and provide ranchers an opportunity to compete better with beef-raising areas where production is higher and costs are lower.

The scientists obtained the boost in meadow production by controlling the amount of water used to irrigate rather than flooding the meadow continuously. They have also applied 150 lb. actual nitrogen per acre annually.

The meadow contains some of the higher producing grasses. This treatment has not only boosted hay yields to four tons per acre, but has also increased the quality of the hay by raising its crude protein content.

Vegetable King Finds That Scientific Farm Methods Pay

LOVINGTON, N.M. — The onion crop of Lea County, N.M., this year is being estimated at four and a half million pounds, or the equivalent of 150 freight carloads.

Onions were first introduced to the area a few years ago by Henry Hirada, American born Japanese farmer, who owns 800 acres of irrigated land east of Lovington. Mr. Hirada is known as the vegetable king of eastern New Mexico and grows a dozen kinds of vegetables. This year he is specializing in onions and his crops are just hitting the market. He has his own trucks and is sending them to cities as far away as Chicago and Pittsburgh.

Mr. Hirada grew up in the vegetable growing area near Rocky Ford, Colo., where he learned scientific farming from his father. He says the secret of growing vegetables is to learn the habits of each plant and pamper it as you would an ailing child.

He prepares his land correctly, applies large amounts of fertilizer, controls insects and diseases, and then knows when and where to market the products.

He was one of the first in this area to use potash as a fertilizer, and says it helps keep tomatoes and other vegetables from getting soft on the long truck hauls. Largely through his influence, farmers are now turning to vegetables as a second cash crop to put on land that cannot be planted to cotton.

The Farm Chemicals Library
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A concise textbook dealing with basic concepts of soils. Much useful information for students in agriculture, farmers, fertilizer salesmen, etc. 68 pages, paper bound $1.00

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COMMERCIAL FERTILIZERS, Their Sources and Use—Fifth Edition (1955) *Gilbeart H. Collings*

Based upon the author's practical experience as an experiment station agronomist and teacher, and incorporating information on recent developments by agronomists, chemists, engineers and fertilizer manufacturers. Authoritative on problems concerning commercial fertilizers and their use in gaining larger yields. 160 illustrations, 522 pages $8.00

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Malcolm H. McVickar

Dr. McVickar is chief agronomist of the National Fertilizer Association. The book deals specifically with commercial fertilizer, how it is produced and how to use it. It is non-technical. It includes chapters on how to measure fertility of soils, secondary and trade-element plant foods. 208 pages, 106 illustrations, cloth bound $3.00

HUNGER SIGNS IN CROPS—Second Edition

A symposium—published jointly by the American Society of Agronomy and the National Fertilizer Association.

A comprehensive study of nutrient-deficiency symptoms in crops compiled by 19 of the leading authorities in the field. It is being widely used by college professors, research and extension specialists, industrial chemists and agronomists, county agents, and teachers of vocational agriculture. Many farmers have found it of particular value in planning their fertilizer programs. Cloth bound, 390 pages, 242 illustrations, including 124 in full color $4.50

MANURES AND FERTILIZERS

A survey by the Ministry of Agriculture and Fisheries, dealing with soil analysis, inorganic fertilizers, waste organic substances and principles of manuring. In language to give the farmer basic principles of increasing soil fertility by the application of natural organic manures and synthetic inorganic fertilizers. Many important tables on quantitative data $2.50

PLANT GROWTH SUBSTANCES (1953) *L. J. Audus*

Professor of Botany, Bedford College, University of London

This book deals with efforts to increase the yield of agricultural and garden crops, and the application of chemicals as it applies to plant physiology. It is not too technical and is valuable to chemical specialty manufacturers, agricultural chemists, plant physiologists, ecologists and gardeners with scientific interest. Dealing with scientific fundamentals and practical application of growth substances, as well as in bibliography, make it an important source book in the field. 456 pages, 43 illustrations $6.50

PLANT REGULATORS IN AGRICULTURE

Dr. Harold B. Tukey

Published September, 1954. A textbook giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarpy, abscission, prevention of preharvest fruit drop, delaying foliation and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of seventeen authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages $5.50

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Published jointly by the American Society for Horticultural Science and the National Fertilizer Association.

An entirely new, one-of-a-kind book, it is designed to acquaint readers with nutritional deficiency symptoms or "hunger signs" of common yard and garden plants including lawn grasses, shrubs, flowers, garden vegetables, and cane and tree fruits. It stresses plant "feeding," or "what makes plants grow." Sixteen of the nation's leading horticultural authorities collaborated in its preparation. Cloth bound, 300 pages of text and illustrations including 37 pages in full color.... $3.00

WEEDS—Second Edition (1955) *W. C. Muenscher*

Entire book has been revised and reset, with descriptions of seventy weeds added to the original list of five hundred, plus twelve new full-page plates depicting nineteen kinds. Keys and full descriptions provided for identification with detailed illustrations of 331. Types and sources of weeds, their means of reproduction and dissemination, and the amount of damage they inflict on crops. Specific directions for control, with references to chemical methods of recent discovery $10.00

WEED CONTROL *W. W. Robbins, A. S. Crafts, and R. N. Raynor*

A textbook-manual presenting a modern view of the rapidly developing field of chemical weed control. Reports in detail the research on which most modern herbicide usage is based. Weeds, their reproduction, prevention, biological control, chemicals in weed control. Herbicides, foliage contact applications, hormone-like substances, root applications, evaluations of combinations of chemical applications. Weeds of grasslands and turf. Special weed problems, cropped and uncropped areas. Published 1952. 503 pages, 155 illustrations $8.00

INSECT, FUNGUS AND WEED CONTROL *Dr. E. R. de Ong*

The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful $10.00

THE CHEMISTRY AND ACTION OF INSECTICIDES

Harold H. Shepard, Entomologist, U.S. Department of Agriculture, formerly Associate Professor of Insect Toxicology, Cornell University.

Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages $7.00

DDT and NEWER PERSISTENT INSECTICIDES

T. F. West and G. A. Campbell

The first and major part of book is devoted to the physical and chemical properties, manufacture, formulation and applications of DDT. The second part deals with other chlorinated hydrocarbons whose insecticidal properties have been discovered recently and compares these new insecticides with DDT. The preparation of aqueous suspensions, solutions, emulsions, and dusts containing DDT, the compatability of DDT with other insecticides, fungicides and additions are covered in detail. Contains dozens of tables on the solubility of DDT in various solvents, the catalytic activity of accessory substances in the presence of DDT, analogues of DDT, the comparative toxicity, hydrolysis and solubility of DDT analogues, the toxicity of DDT for almost all important insects, etc. Many illustrations $8.50

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This text since 1921 has had an outstanding record of usefulness. The Fifth Edition preserves the general organization and coverage, with changes to improve the presentation and to incorporate new knowledge. Contains chapters on anatomy, physiology and development. The economic importance and control of insects are discussed in a general way with much attention to insecticides. The classification of insects is emphasized, with examples drawn from species conspicuous for being very harmful or decidedly beneficial. Specific control measure included for injurious forms. Last chapter considers other pest animals closely related to insects. 385 pages $7.00

CHEMICAL BUSINESS HANDBOOK *Dr. John H. Perry*

1,300 double column pages, the equivalent of several average books; 700 illustrations, by 124 contributors. Market research data section is 280 pages, business mathematics 200 pages, financial and accounting 142 pages, research and development 150 pages, sales and advertising 92 pages, twenty sections in all. The book deals with chemical management problems and is useful to technical men, engineers and executives, in the chemical and allied fields. Dr. Perry is editor of the Chemical Engineers Handbook, a companion publication $17.00

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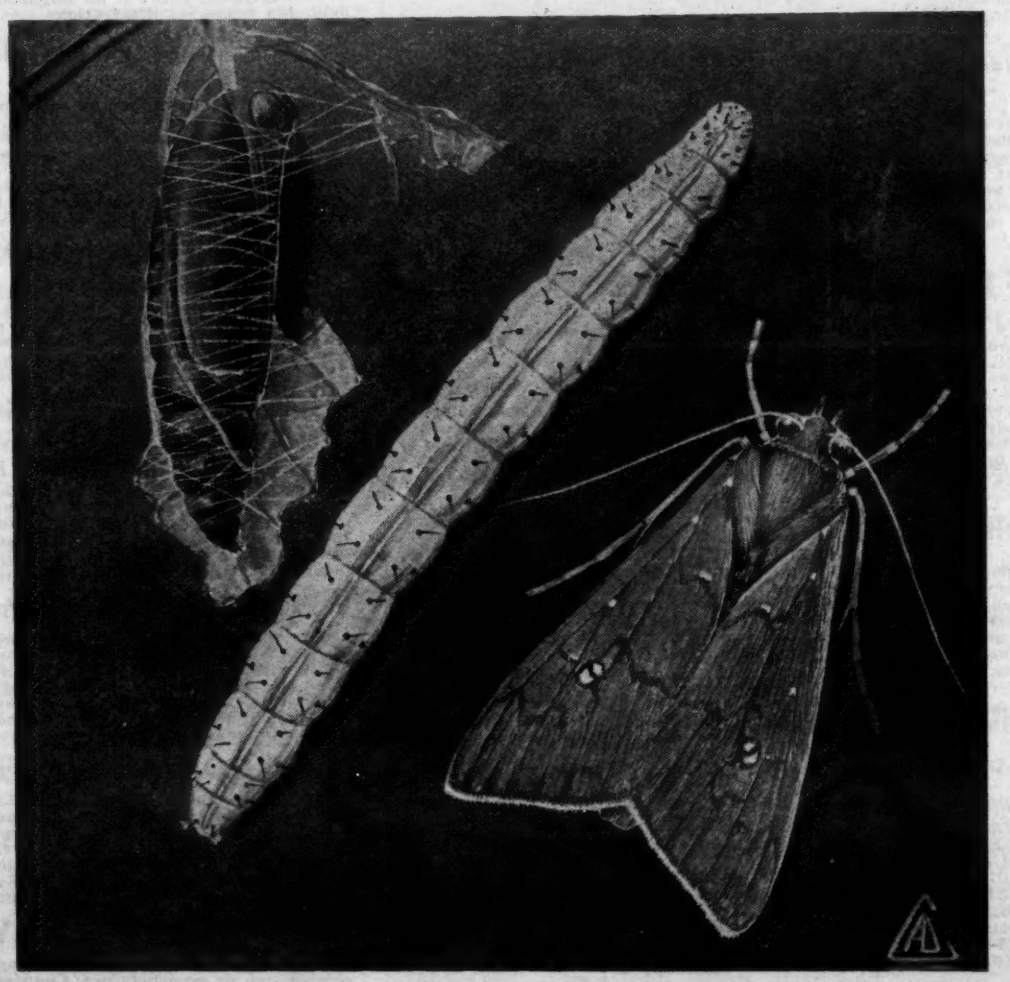
BUG OF THE WEEK

Mr. Dealer--Cut out this page for your bulletin board

Cotton Leaf-worm



How to Identify

The cotton leafworm is a tropical pest. Although it cannot survive winter months in the U.S., new infestations are started each spring by moths that fly in from the south and lay their eggs on cotton. The full-grown worm is about 1½ inches long, greenish, with white and black stripes and with black spots over its body. Its half-looping crawl is characteristic.

Habits of Cotton Leafworm

The first leafworms usually appear in April, May or June, usually in southern Texas, but sometimes in Florida. As the leafworms increase in numbers, the moths fly to other areas and in some years invade all the cotton states except California. It is the larvae, or "worms," that feed on cotton. The small leafworms feed on the underside of the leaves and do not cut through the upper surface. Eggs are laid on the underside of the leaves. Worms hatching from these eggs become full grown in 2 or 3 weeks. The worms change into brown pupae in folds of the leaves. In about a week, the moths emerge and a new life cycle begins. The insect has 3 to 6 generations in one season. Wet weather is favorable to leafworm outbreaks.

Damage Done by Leafworms

Although smaller worms feed on the underside of the leaves and do not cut through the upper surface, larger worms eat the entire leaves. When abundant, they completely strip, or "rag" the leaves and then gnaw on the squares, bolls and bark until the field looks as if it had been burned off. Early ragging of plants prevents the bolls from maturing and reduces the yield and quality of the cotton.

Control of the Leafworm

A number of materials and combinations of pesticides have been found effective in control of the leafworm. These include toxaphene in either dust or spray form, at the rate of 1.5 to 2 lb. an acre of technical material; dusting with calcium arsenate or lead arsenate at 5-7 lb. an acre; 3% gamma BHC dust either alone or with 5% DDT; and a mixture of 20% toxaphene dust and 5% DDT. Naturally, large worms are more difficult to control and may cause considerable stripping before they are killed. USDA says that if a quick kill of large worms is needed to prevent stripping, add 7 or 8 lb. paris green to each 160 lb. calcium arsenate or use 8-10 lb. paris green plus 100 lb. lime.

Drawing of cotton leafworm furnished Croplife through courtesy of Hercules Powder Co., Wilmington, Del.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

ew TV Film on onservation eing Produced

WASHINGTON — "From the round Up" is the name of the Na- onal Plant Food Institute's newest ½ minute TV film which is being oduced in cooperation with USDA's il Conservation Service, to empha- ze the importance of conservation relation to soil fertility.

"Location" for the new movie is Maryland.

"The story is one that will be of nterest to farm and city audiences alike," reports NPFI secretary and irector of information, Louis H. Wilson. "The importance of main- aining soil fertility, crop rotation, erracing, and conservation of water and strip cropping are em- phasized by the producers," he says.

The institute was the first trade ssociation to negotiate a contract ith the U.S. Department of Agri- ulture under a new policy permit- ng commercial organizations to pro- uce TV and feature length films in ooperation with the department.

In addition to distribution by the Soil Conservation Service state of- fices throughout the country, film service also will be provided by the institute.

Announcement will be made later s to when production is finished and lms are available for use by mem- ers.

roduction to Start oon at Iowa Plant

CHARLES CITY, IOWA — The orhes Chemical Corp., organized nd incorporated here last spring ith a capital stock of $200,000, will e ready to start production at its ew fertilizer plant here about Sept. This announcement was made by arold Vorhes, executive vice presi- ent and general manager of the new ompany.

The company some time ago ac- quired the Armstrong building here which has been remodeled and enlarged and in which new ma- chinery is now being installed. Both bulk and bagged fertilizer will be manufactured, Mr. Vorhes stat- ed. The products will be sold through the dealer trade.

In addition to Mr. Vorhes, other of- cers of the corporation include alph W. Zastrow, president; Robert errigan, secretary, and Merten J. laus, treasurer.

ink Bollworm uild-up Reported Texas Region

CORPUS CHRISTI, TEXAS — An arming build-up of pink bollworms the Coastal Bend area has been eported by Lamar Folda, chairman the Coastal Bend Pink Bollworm ommittee.

Green boll inspections have re- ealed on some late planted field he infestation is 100%. A heavy in- estation also has been indicated by he number of worms found in gin ash.

The committee has urged that armers destroy their stalks earlier han the Sept. 25 deadline, because the unusually heavy infestation. he committee is composed of lead- g cotton farmers, ginners and oil ill owners of this area.

FLORIDA CONSUMPTION

TALLAHASSEE — Consumption of rtilizer in Florida during June to- led 134,318.2 tons, according to the lorida Department of Agriculture.

Research Program To Be Described at Mechanization Meeting

COLLEGE STATION, TEXAS — Latest developments in a program designed to steadily step up agricultural research and education will be outlined here Sept. 7.

Objective of the plan is to put science to work for agriculture just as hard as it is working for the rest of the nation's economy. Its progress will be described by Ervin L. Peterson, assistant secretary of the U.S. Department of Agriculture.

The USDA official's speech will be one of the principal addresses of the ninth annual Beltwide Cotton Mechanization Conference, Sept. 7-9.

Farm and commodity organizations, state and federal agricultural workers, and the USDA for several months have been studying a proposal for long-range expansion of government agricultural research and extension. Under the plan, appropriations for this system of serving farmers would be just about doubled over the next five years. Primary aim is a program embracing the long-range needs of agriculture, with appropriations assured over a period of years rather than on a year-to-year basis.

Farm leaders advocating the plan have pointed out that budgets for agricultural research lead such a precarious existence from year to year that it has been necessary to concentrate on projects yielding quick results rather than basic but essential research.

The National Cotton Council is sponsoring the mechanization conference in cooperation with the Texas A&M College System, USDA, land grant colleges, and the Farm Equipment Institute.

1954-55 Sales In Wisconsin Show 1.9% Decline

MADISON — Wisconsin fertilizer sales in the 1954-55 fiscal year totaled 427,953 tons, a 1.9% decline from 436,452 tons the previous fiscal year, according to the State Department of Agriculture.

The 1954-55 average composition was 4.46-14.11-17.38, with a total of 35.95 units of plant food, compared with a composition of 4.41-13.51-16.35 and a total of 34.27 units a year earlier.

Included in the 1954-55 total were 317,206 tons of mixed goods. Spring sales total 344,625 tons and fall sales 83,328 tons.

CROP GROUP ELECTS

ALEXANDRIA, LA. — Dan Logan of Gilliam has been named president of the Louisiana Crop Improvement Assn.

Flood Cleanup Under Way at Naugatuck Chemical

NEW YORK — Although hard hit by the recent floods that swept New England, the Agricultural Chemical Sales Department of the Naugatuck Chemical Division, United States Rubber Co., reports it has stocks in outside warehouses and will be able to make limited deliveries of most products.

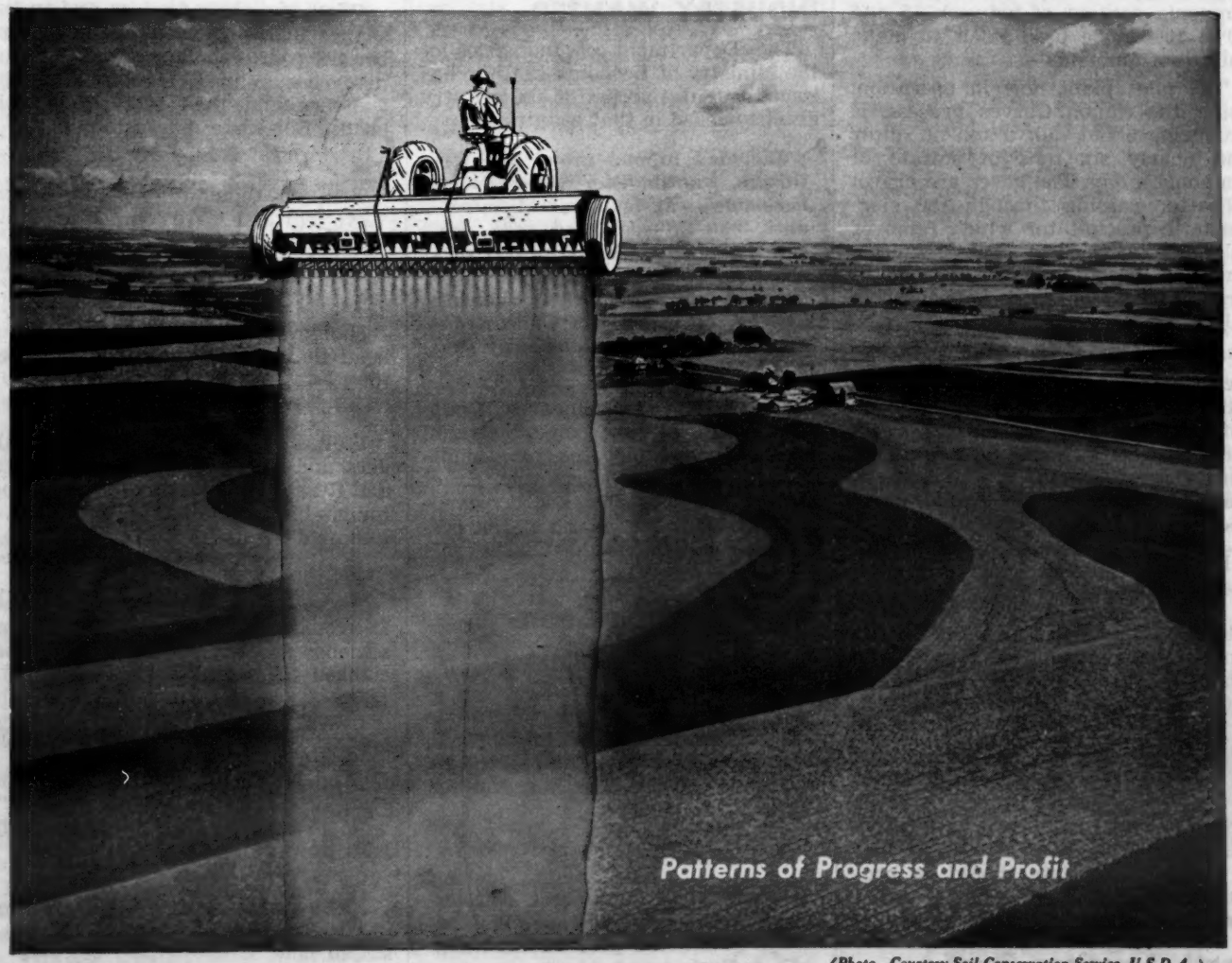
There are limited supplies of alanap, aramite, MH-30, phygon and spergon. Customers in the West and Midwest are also assured of supplies of MH-40.

Cleanup and rehabilitation work started at the Naugatuck plant soon after flood waters receded and production will start up as soon as possible, the company stated.

CHEMICAL HANDLING COURSE

CHICAGO — A three-day institute designed to acquaint tank truck carrier drivers and other personnel with safe and efficient transportation of chemicals, gases and similar commodities, is scheduled to be held Aug. 29 to Sept. 1 at the Illinois Institute of Technology here.

The program of Aug. 31 is to be devoted to the handling of specialty tanks carrying fertilizer solutions and other materials.



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WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

LONDON—British electric power stations are experimenting with what is claimed to be a new flue gas washing process which not only extracts upwards of 95% of sulfur in the gases, but can produce sulfate of ammonia and pure sulfur as well.

Interest in the problem was sparked when government reports repeatedly drew attention to the problem of air pollution by sulfur, and the urgent need to reduce it. Sulfur, a constituent of coal, is not burned in combustion but escapes with the flue gases, becoming sulfuric acid on contact with moisture in the atmosphere. It causes considerable damage to metal, stone, fabrics and vegetation.

Hitherto, flue washing has been done at a limited number of power stations by a more expensive process but no valuable material has resulted therefrom.

The new process has been developed by Simon Carves, the British engineering firm. It washes the flue gases with a solution to which concentrated gas liquor has been added. This liquor is provided by manufacturers of gas from coal. Gasworks are obliged by law to remove ammonia from their gas, which they wash with water. The crude solution remaining is the liquor and it has an ammonia content of between 15 and 20%. It can be used itself to make sulfate of ammonia.

The pilot plant now in operation, using the Simon Carves process, is producing about half a ton of sulfur and nearly six tons of sulfate of ammonia a day. The gases are drawn off after passing through the electrostatic precipitator which removes the grit from them. They enter a scrubber where they are washed in circulating liquor which absorbs their sulfur oxides.

The liquor itself is neutralized with ammonia so that it does not itself become acid. Part of it is bled off, filtered and treated in pressure vessels by being heated to a pressure of 200 lb. to the square inch in the presence of a small proportion of sulfuric acid.

In this way, the officials explain, the various sulfur compounds formed in the scrubbing cycle are converted into sulfur, which is extracted in its pure state, and sulfate of ammonia, which is discharged in a solution, crystallized and dried.

The major drawback to the process lies in the limited amount of gas liquor available for use. However, British opinion favors proceeding with the experiments because sulfur has to be imported and it is felt that as much as possible should be produced in order to save foreign currency.

South American Plant

Permission to establish a new company to manufacture fertilizers has been asked of the Venezuelan Ministry of Agriculture by a group headed by Dr. Antonio Fuentes Davila, a chemist. The proposed plant would be located in Cabimas (Zulia State) and produce fertilizers for application in the cultivation of tobacco, rice and sugar cane.

The Nigeria Trade Journal has reported that the Southern Cameroons Marketing Board has made a grant of £15,000 to the Cameroons Cooperative Exporters, Ltd., to cover initial capital expenditure on spraying equipment and chemicals for use against black pod disease. The equipment and chemicals are reported to be in use now and more than 300 farmers have attended short training courses in the correct use of equipment and handling of chemicals. Latest reports indicate that results of this spraying activity are "very encouraging."

INDUSTRY WANTED

The Department of Industries of the Ministry of Economy in Chile has issued a tentative list of six industry groups needed in that country.

Included in one group are fertilizers, antibiotics, insecticides, herbicides, agricultural disinfectants, caustic soda and soda ash, sulfuric acid and agricultural machinery. These products were grouped under industries producing articles of which the Chilean domestic market is insufficiently supplied.

The Chilean government will publish an official list soon which will describe completely the new industries required by the country. Exact requirements for domestic consumption of each industry and export possibilities will be included.

Walter Gibbs in New Michigan Chemical Post

ST. LOUIS, MICH.—Walter Gibbs has been appointed purchasing agent at Michigan Chemical Corp.

Mr. Gibbs first came to Michigan Chemical in 1935 during the original construction of the company's St. Louis plant. Since then, he has been a member of the operations and maintenance departments, and recently has served as acting purchasing agent for the company.

Tissue Testing Seen As Tool for Learning Fertilizer Needs

WENATCHEE, WASH. — Tissue testing can be a valuable tool for determining fertilizer needs, Nels R. Benson, associate soils scientist at the Washington Tree Fruit Experiment Station here, says.

Analysis of sugar beet petioles for nitrate has proved effective and shows additional possibilities when the analysis technique is more carefully calibrated on a soil and crop, Mr. Benson says.

Work has been done before with leaf analysis on fruit trees, but Mr. Benson says other parts of the plant may give better indications than the leaves. Leaf analysis in Florida citrus showed an iron deficiency was causing chlorosis but when roots were analyzed it was found there was also an overabundance of available copper.

Mr. Benson reports that tissue analysis isn't always a positive indicator of a nutritional disorder nor will tissue analysis necessarily reflect yield potential of trees.

MORE AERIAL SPRAYING

DES MOINES — There is more aerial crop spraying and dusting going on in Iowa this season than ever before, according to Norbert Locke, director of the State Aeronautics Commission.

Gloomicides

A little girl in the second grade had been told to bring her birth certificate at the opening of school. She was found by the teacher sobbing in her seat. When asked what the trouble was, she said: "I forgot to bring my excuse for being born."

★

Looking coldly at the man who had just given him a nickel for carrying his bags 12 blocks, the little boy said, "I know something about you."

"What?" asked the man.

"You're a bachelor."

"That's right. Know anything else about me?"

"Yeah. So was your father."

★

A church had burned down and the only available room in the community large enough to handle Sunday services was a roadhouse near town. Trustees leased the building, stipulating that the bar be screened off and as many reminders as possible of week-day business be removed.

All was well done except that the proprietor forgot to remove a parrot normally perched near the bar. As it kept quiet during the seating of the congregation, no one paid any attention to him until the minister took his place on the platform. The parrot came to life and squawked, "Hey, look, we gotta new bartender."

When the choir filed in, and in the silence following their opening number the parrot spoke again, "Pipe the new chorus line." He observed the audience and then sadly shook his head. "But same old customers."

★

Tom: "I thought your motto was 'Love 'em and leave 'em.' How come you got married?"

John: "I didn't leave soon enough."

★

Hangover: Something to occupy a head that wasn't used the night before.

★

Well, I like Joe for his broad shoulders, and Bud for his new convertible, and Russ for his personality, and Rog for his blue eyes and Lee for his . . . I think I'll go with Lee.

★

We've got too many organizations. It wouldn't surprise us to see on somebody's tombstone: "John Doe, clubbed to death."

★

A little girl was showing her playmate through her new home.

"And here's my daddy's den," she said. "Does your daddy have a den?"

"No," was the answer, "my daddy just growls all over the house."

★

Little Anne: "Mother, they are going to teach us domestic silence at school now."

Mother: "You mean domestic science, don't you?"

Father: "There is a bare hope our little girl means what she is saying."

★

Air castles are nice until you step out the door.

★

The moon not only pulls the oceans back and forth in the tides, it stops cars on the side roads.

★

Our major cities have become so congested with cars and trucks that there are only two kinds of parking left—illegal and no.

★

The nice thing about radio is that it enables you to worry about things in all parts of the world.

★

Never judge a man by the company he keeps. They may be his wife's folks.

Talks on Farm Chemicals Scheduled At Biologists' Meeting

EAST LANSING, MICH. — The program for the annual meeting of the American Institute of Biological Science, at Michigan State University Sept. 5-9, lists many topics of vital interest to the chemical and agricultural industries.

More than 3,000 leading biologists of the U.S. and eight foreign countries are expected for the event. Twenty four national biological societies will meet concurrently with the American Institute of Biological Sciences. The event will help celebrate the Michigan State University Centennial.

In addition to general sessions of the AIBS, there will be individual and joint society meetings, field trips, an exhibition hall, national elections and other activities.

Featured speaker for the institute will be Dr. George Beadle, president of the American Association for the Advancement of Science. He will discuss "What Is a Gene?"

The five-day conference will offer 1,145 speakers, each reading a scientific paper. And there will be another 130 nationally-prominent biologists as symposia speakers.

Following are some of the papers of special interest to Croplife readers:

Charles C. Yeager of Scientific Oil Compounding Co., Chicago, Ill., will report on "Fungicides for the Consumer—A Market Survey."

Peter A. Ark, University of California, Berkeley, will give a paper on "Antibiotics as Bactericides and Fungicides Against Diseases of Plants."

An illustrated talk about "Zinc Chelate Sprays Improve Emperor Grape Production" will be given by J. Richard Kuykendall and Vernon W. Olney, Geigy Agricultural Chemicals, Bayonne, N.J.

"Effect of Irrigation and Fertilizer on Growth and Fruiting of Mature Apple Trees" will be reported by Donald C. Zeigler and Norman F. Childers, Rutgers University.

Two University of California specialists from Riverside, Cal., William S. Stewart and H. Z. Hield, will describe "Some Effects of Sprays of 2,4-D and Related Substances on Citrus Fruit Size and Fruit Drop."

Two other papers also will interest the fruit grower:

"Control of Strawberry Runner Growth with Sprays with Maleic Hydrazide," by C. W. Hitz and M. S. Brown, University of Delaware, Newark, Del., and "The Effect of Some Pruning and Fertilizer Treatments on the Yield of Red Raspberries," by David Allmendinger, West Washington Experiment Station, Puyallup, Wash.

R. E. Webb, John Apel and John Mitchell, of the Horticultural Crops Section, U.S. Department of Agriculture, Beltsville, Md., will report on "Use of 2,3,5 Tetrazolium Chloride to Detect Virus Infection in the Potato."

"Soluble Fertilizers in Vegetable Crop Production" will be discussed by J. D. Campbell, Olin Mathieson Chemical Corp., Baltimore, Md.

There will be many speakers of interest to nurserymen and gardeners, including a report on "A New Rose Fungicide" by Mr. Campbell.

PLOWING CONTEST PLANNED

SIBLEY, ILL. — The Illinois State Conservation Feld Day and plowing matches will be held near Sibley on August 31, according to E. D. Walker, University of Illinois soil conservationist.

RALPH MARCUCCILLI DIES

LOUISVILLE — Ralph Marcuccilli, 58, formerly a partner in the operation of the J.&H. Fertilizer Co., New Albany, Ind., died recently at St. Joseph's Hospital, Louisville, of a heart ailment.

MEETING MEMOS

t. 7-8—Corn Belt Anhydrous Amonia Conference, University of llinois, Champaign-Urbana Camus, Advance Registrations Room 16, Davenport Hall, Urbana, Ill.

t. 7-9—National Agricultural Chemicals Assn., Spring Lake, N.J.; Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

t. 7-9 — Ninth Annual Beltwide Cotton Mechanization Conference, Texas A&M College, National Cotton Council of America, Box 18, Memphis 1, Tenn.

t. 11-16—American Chemical Society, National Meeting, University f Minnesota, Minneapolis.

t. 28-30—New England Fertilizer Conference, Poland Spring House, Poland Spring, Maine.

t. 3-5 — Carolinas-Virginia Pesticide Formulators Assn., Inc., Anual Meeting, Holly Inn, Pinehurst, N.C., J. B. Maddrey, 3111 Broad Creek Road, Norfolk 12, Va., Secretary-Treasurer.

t. 11—Western Agricultural Chemicals Assn., Annual Meeting, Hotel Claremont, Berkeley, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose, Cal., Executive Secretary.

t. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago; Thomas J. Clarke, Chairman.

t. 19-21—First International Conference on the Use of Antibiotics in Agriculture, Washington, D.C.

t. 27—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. LaSalle St., Chicago, Ill.

v. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

v. 2-5—Third annual Mid-Atlantic Farm and Home Show, Convention Hall, Atlantic City, N.J.; William A. Haffert, Jr., Sea Isle City, N.J., executive vice president.

v. 3-4—Northeastern Division, American Phytopathological Society, Eastern States Farmers Exchange, Inc., 26 Central St., West Springfield, Mass. B. H. Davis, Department of Plant Pathology, Rutgers University, New Brunswick, N.J., secretary.

v. 4—Fertilizer Section, South Carolina Annual Accident-Prevention Conference, Hotel Francis Marion, Charleston, S.C.; Anton L. Foster, International Minerals & Chemical Corp., General Chairman.

v. 7-8—California Fertilizer Assn., Thirty-second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Bierly, Executive Secretary and Manager, 475 Huntington Drive, San Marino, Cal.

v. 17-18—Nitrogen Solution Field Day, National Nitrogen Solution Assn., State Armory, Springfield, Ill.; Roy F. Broyhill, Dakota City, Neb., meeting chairman.

v. 29-Dec. 2 — Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.

c. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

c. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.

c. 8-9 — Michigan Fertilizer and Lime Conference, Michigan State College, East Lansing.

Dec. 15-16—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Sponsored by the National Cotton Council.

Dec. 28-30 — American Phytopathological Society, Atlanta, Ga.; Glenn S. Pound, University of Wisconsin, Madison, Wis., Secretary.

1956

Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York; W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Jan. 15-17 — New Mexico Grain & Feed Dealers Assn., Annual Convention, Hilton Hotel, Albuquerque, with Special Portion for Fertilizer and Farm Chemical Dealers; H. B. Hening, Albuquerque, Secretary.

Jan. 16-18—Southern Weed Conference, Ninth Annual Meeting, Hotel Jung, New Orleans; Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, Secretary-Treasurer.

Jan. 26-29 — Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Feb. 15-17 — Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

Chemical Spraying To Delay Grape Ripening Reported

DAVIS, CAL.—Chemical spraying will delay the grape ripening process and will extend the harvesting season over a longer period of time, according to a description presented at a meeting of the American Society of Enologists at the College of Agriculture of the University of California here.

Robert J. Weaver, lecturer in viticulture, described the process at the meeting lasting from July 13 through 15. Grapes treated with a growth-regulating hormone named benzothiazol 2-oxyacetic acid ripen about two weeks later, he told the nearly 200 winemakers attending the meeting.

Since the experiments are not complete, Mr. Weaver could not recommend use of the chemical in commercial vineyards, but indicated both the chemical and the continuation of experiments should be watched for possible future application.

Kentucky to Offer Fertilizer Course

LOUISVILLE—The University of Kentucky will offer a course in fertilizers and soil fertility as part of its fall semester evening program. The course is designed for fertilizer salesmen and dealers and others interested in the manufacture, sale and use of fertilizer. It will be taught by William A. Seay, professor of soils, Department of Agronomy.

California Commercial Fertilizer Sales Show 21,000 Ton Gain in Second Quarter

SAN FRANCISCO — The sale of commercial fertilizers in California increased by more than 21,000 tons between the second quarter of 1954 and the corresponding three months of the current year.

The Bureau of Chemistry of the State Department of Agriculture shows that where the period from April 1 through June 30 of last year revealed total sales of 299,195 tons of all fertilizers, including mixed commercial dry, the same three months of 1955 showed sales of 320,702 tons.

Two chemical mixtures were chiefly responsible for influencing this gain, ammonium solution 20-0-0 and anhydrous ammonia. In the case of the former, sales jumped almost 30,000 tons, from 45,534 last year to 74,643 this year, giving this chemical top place for the quarter for the first time. Gains from the first quarter of the year were as much as 45,000 tons, from 29,831.

Anhydrous ammonia, which was not listed in an independent category a year ago, now ranked fourth place with sales totaling 20,245 tons, a jump from eighth place and 11,060 tons during the period from January 1 through March 31 of this year.

Another substantial gain was registered by the sales of liquid mixed fertilizers, from eighth place and 8,051 tons during the second quarter of 1954 to sixth and 17,271 tons this year. These chemicals ranked ninth with sales totaling only 5,353 tons during the winter quarter, 1955.

The total gains of these three types of chemical solutions, about 59,000 tons, was partially offset by several losses. Mixed dry commercial fertilizers fell from top place and 77,978 tons last year to second position and 68,650 tons this year. Ammonium sulfate went from second to third by losing about 6,000 tons, dropping from 62,673 to 56,213 in the corresponding quarters. Ammonium nitrate lost another 4,000 between the two periods, from 19,591 to 15,171.

Another important chemical showed only a fractional rise, ammonium phosphate sulfate 16-20-0, rising from 17,093 tons to 17,442, and this remaining in fifth place.

One other chemical registered sales greater than 10,000 tons, gaining slightly from last year. Superphosphate, normal, rose from 9,269 to 10,520. The miscellaneous chemical category, which grouped a total of 18,768 tons of chemical sales, not further identified, showed only 808 unsegregated sales this year.

Altogether a total of eight chemical mixtures were registered in the above 10,000 group this year as compared with five last year and 15 in the above 1,000 tons, as compared with 17 last year. The remaining seven chemicals in this group this year were calcium nitrate with 7,991, up from 6,538; urea with 6,725, down from 8,117; ammonium nitrate solution with 5,348, down from 5,836; activated sewage sludge with 3,513, up fractionally from 3,198; ammoniated superphosphate with 3,428, doubling last year's 1,707; superphosphate treble with 3,093, down from 3,488; and liquid phosphoric acid with 2,540, up fractionally from 2,431.

Last year 17-7-0 held top place in the mixed dry group with sales totaling 9,305 tons. This year the mix fell to third place and registered only 4,334 tons. By this default, 10-10-5 moved into first place, although sales dropped from 8,994 to 6,433 between the two periods.

The only significant gain was registered by 10-10-10, which rose from fifth place and sales of 4,190 to second place and sales of 5,991. In the case of almost every other chemical in the top 12 except three, there were losses between the two years. A gain of about 500 tons was shown by 6-10-4, from 1,575 to 2,030; and by 4-5-2 and 11-8-4. Neither of these two mixes registered sales greater than 1,000 tons last year, but stood in 11th and 12th position this year with 1,172 and 1,046, respectively.

Sale of agricultural minerals in California climbed almost 10,000 tons between the second quarters of 1954 and 1955, according to the Bureau of Chemistry.

About half of the gain was registered by gypsum, from 81,865 to 86,342. The totals for the two periods were 100,687 and 110,429, respectively. Calcium carbonate accounted for another 4,500, rising from 3,993 to 8,545 between the two periods. Sewage sludge rose another 500 tons, from 5,687 to 6,175.

Another gain of 1,300 tons by lime-sulphur solution, from 1,904 tons to 3,209, was offset by an almost equivalent loss registered by magnesium carbonate, which dropped from 1,992 to 627 tons.

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AGRONOMISTS

(Continued from page 1)

stem rust disease was tested. The techniques and testing program were similar to that reported by Dr. Myers with results showing a slightly smaller percentage of resistant plants.

Dr. Myers stated that the overall practical effect of the successful use of irradiation would be to speed the uncovering of new varieties by three to four years, and provide the plant breeder with another tool with which to work. The use of irradiation, he cautioned often produces other unfavorable characteristics such as shorter plant height, partial sterility, slower plant growth, etc. He added, however, that these factors can be compensated for when more information is available on a pattern of behavior.

That California bean growers are now able to kill weeds in their fields with 2,4-D by shielding the crop plants was reported by Eugene E. Stevenson, Stanislaus County farm adviser. He said that growers have been able to produce from 30 to 40 sacks of large limas per acre from land once so heavily infested with morning glory that beans could not be harvested.

Although beans are sensitive to the action of 2,4-D, they can be shielded from the spray and not damaged, he said. Construction of such a shielding sprayer is not difficult, he said, and it can be made of canvas or tin. Tunnels are made to fit over the crop plants in the row, while the 2,4-D or other weed killer is sprayed between the rows in covered troughs. The rig is mounted on the front of a tractor.

About 1½ lb. of the amine form of 2,4-D is applied per acre when the beans are high enough to go through the tunnels and the morning glory is well sprouted.

Shielded spraying is also being used to apply weed killers to cotton, alfalfa, beets, and many seed flower crops in California's San Joaquin Valley, Mr. Stevenson said.

A demonstration on modern irrigation was presented at the Irrigation Experimental Field of the University. Presented were specimens of equipment and materials and techniques of operating, including the application of fertilizer materials with irrigation water.

Stops were made at various points on the irrigation tour, where university experts described the work being done. Points emphasized included surface irrigation and land preparation; water conveyance, measurement and drainage; sprinkler irrigation, and the demonstration itself.

The latter was presided over by R. M. Haran, chairman of the department of irrigation at the university; while other parts of the program were conducted by W. A. Hall, assistant professor of irrigation.

Selected as the "Outstanding Student Agronomy Club" in the U.S. for 1955, was the Field and Furrow Club of the University of Illinois. Duane Swarts, student president of the club, received a check for $100 from Dr. W. H. Garman, National Plant Food Institute, Washington, D.C., sponsors of the award.

An additional $100 will also go toward a scholarship for a member of the club. Selection of the winning club is made by a committee composed of senior agronomists throughout the country. The committee this year was headed by H. K. Wilson of Pennsylvania State University.

Other awards were also presented at the Davis meeting. The ASA's national student essay contest was won by Donald M. Faulkner, Richmond, Va., it was announced at the meeting. Mr. Faulkner is a student at Cornell University, Ithaca, N.Y. Subject of his winning essay was "Agricultural Extension Publications."

Second place winner was Charles F. Murphy, Ames, Iowa, for his essay, "Atomic Varieties."

"Fall Fertilization" was the title of the essay that placed third. It was authored by Dean L. Swedlund, Stratford, Iowa.

The American Society of Agronomy also honored thirty crop and soil scientists who were elected to Fellowship in the Society. This recognition is based on outstanding crops and soils research work during the past year. Selection of those receiving this recognition is made by a committee, headed this year by Dr. C. J. Willard of Ohio State University. Dr. Willard is the immediate past president of the ASA.

The 30 Fellows are:

Dr. H. H. Kramer, Purdue University, Lafayette, Ind.; Dr. Ralph M. Caldwell, Purdue University, Lafayette, Ind.; Dr. G. O. Mott, Purdue University, Lafayette, Ind.; Dr. Werner L. Nelson, Manager, Midwest Office, American Potash Institute, Lafayette, Ind., and Dr. G. F. Merkle, Penn State University, State College, Pa.

Dr. H. B. Musser, Penn State University, State College, Pa.; Dr. R. R. Robinson, U.S. Department of Agriculture, State College, Pa.; Dr. H. D. Chapman, University of California, Riverside, Cal.; Dr. S. J. Richards, University of California, Riverside, Cal., and Dr. J. P. Conrad, University of California, Davis, Cal.

C. A. Suneson, U.S. Department of Agriculture, University of California, Davis, Cal.; Dr. George H. Dungan, University of Illinois, Urbana, Ill.; Dr. J. E. Gieseking, University of Illinois, Urbana, Ill.; Dr. E. H. Tyner, University of Illinois, Urbana, Ill.; Dr. J. M. Poehlman, University of Missouri, Columbia, Mo.; Dr. C. M. Woodruff, University of Missouri, Columbia, Mo., and Dr. H. L. Shands, University of Wisconsin, Madison, Wis.

Dr. H. C. Knoblauch, U S. Department of Agriculture, Washington, D.C.; Dr. David F. Beard, U.S. Department of Agriculture, Beltsville, Md.; Dr. W. E. Colwell, North Carolina State College, Raleigh, N.C.; Dr. Royce P. Murphy, Cornell University, Ithaca, N.Y.; A. L. Hafenrichter, U.S. Department of Agriculture, Portland, Ore., and Dr. P. H. Harvey, North Carolina State College, Raleigh, N.C.

Dr. Wesley Keller, Utah State Agricultural College, Logan, Utah; Dr. Kling L. Anderson, Kansas State College, Manhattan, Kansas; Dr. G. M. Browning, Iowa State College, Ames, Iowa; Dr. W. S. Ligon, U.S. Department of Agriculture, Knoxville, Tenn., and Dr. Garth W. Polk, Head, Ohio Agricultural Experiment Station, Columbus, Ohio.

ASA ELECTS

DAVIS, CAL.—An Iowa State College professor and farm research specialist is the new president of the American Society of Agronomy. He is Dr. Iver Johnson, professor-in-charge of Farm Crops. His election was announced during the annual dinner of the ASA Aug. 17. Vice president of the society was named as Dr. A. J. Norman, soils physicist. Dr. Norman is presently on a special research project for the University of Michigan at Ann Arbor.

Other officers elected were: Dr. D. W. Thorne, president of the Soil Science Society of America; Dr. Thorne is head, Department of Agronomy, Utah State Agricultural College, Logan, Utah. Dr. G. O. Mott, president of the Crop Science Division; Dr. Mott is professor of Agronomy, Purdue University, Lafayette, Ind. Dr. D. S. Metcalfe, president of the Agronomic Education Division. the Agronomic Education Division; farm crops, Iowa State College, Ames, Iowa.

Naugatuck Places New Plant Growth Regulator on Market

NEWARK, DEL.—Naugatuck Chemical Division of U.S. Rubber Co. has placed on the market its new fruit-setting plant growth regulator, "Duraset." The material has undergone three consecutive years of experimentation at the Delaware Agricultural Experiment Station here.

According to information issued by the experiment station, the product in one case, increased baby lima bean yields as much as 96%, according to Prof. E. M. Rahn of the University of Delaware. In seven experiments, the average increase was 26%, or 474 lb. shelled lima beans per acre.

In 1954, three lima bean fields were dusted at bloom by airplane using 0.26% dust. In one 12-acre field a 31% increase resulted. In another 5-acre field, a 20% increase resulted. In still another 5-acre field, a 5% increase resulted.

Duraset is the trade name for this new plant growth regulator, N-metatolyl phthalamic acid. When applied during the pod-setting period of lima beans, it appeared to reduce excessive dropping of buds, flowers, and small pods when extended hot, dry weather or extended rainy weather prevailed at this time. In certain cases this material has also aided fruit set of tomatoes as well as peppers, snap beans, cherries, and strawberries.

The experiment station has urged growers to try this material on several plantings on a trial basis at first, according to Prof. Rahn. He points out that although this material has been very effective under certain conditions, it has not been effective in every location where it was used.

Irrigation was a helpful factor in some of the experiments, increasing pod-set and yield as much as 100%, with an average of 35%. (577 lb. shelled beans per acre, in seven experiments.)

Arkansas Farm Bureau Plans Convention

LITTLE ROCK, ARK.—The 20th annual convention of the Arkansas Farm Bureau Federation will be held Nov. 20-22 here at Hotel Marion, Joe C. Hardin, president, announced.

Most important part of the meeting will come Nov. 22 when voting delegates form the policy under which the state organization will operate for another year.

Mr. Hardin also said a "group of the best authorities in agriculture" will address delegates. He said 54,554 farm families have enrolled in the state organization this year, an all-time high for this time of the year.

PAPER MONEY ADVANCED

WASHINGTON, D.C.—The World Bank has loaned Pakistan $4.2 million to help that country to finance construction of a pulp and paper mill. The new mill, to be located in East Pakistan, is designed to produce some 30,000 tons of writing and wrapping paper a year from bamboo. It will be operated by the Karnaphuli Paper Mills, Ltd.

PHOSPHATE OUTLOOK

(Continued from page 1)

Nitraphosphate — which found an accelerating market during the Korean market tightness in sulfur which materially reduced sulphuric acid supplies and speeded up use of nitric acid processing.

Other changing aspects of the phosphatic fertilizer industry are reported by the bureau citing a marked trend away from the direct application of raw phosphate rock as fertilizer. Now, however, the use of finely ground phosphate rock in the Mid-west has increased rapidly. Some measure of this expanding demand is found in some data presented by the bureau in which it reports that in 1940, consumption was only 3% of total domestic sales or 106,29[illegible] long tons, but by 1950, this consumption rate had jumped to 8% of all domestic sales and amounted to better than one million tons.

Although the commercial aspects of phosphatic fertilizer are assayed as favorable by the bureau, its report points up some vexatious problems pressing for solution. Among them is conservation through the development of new mining techniques particularly in the western states where reformation data is incomplete.

Another problem is one of development of by-product recovery and the utilization of by-products. More and more the phosphate mining industry finds the end users, the fertilizer industry and the users of elemental phosphorus and phosphoric acid, are competing with each other.

By-product recovery as in other industries is now becoming a front line problem within the phosphate industry. As agricultural chemicals become of increasing importance as indicated by this report, it will be necessary for phosphatic mining operations to recover many trace elements which are now being lost. In Florida and Tennessee mining operations, commercial utilization of residual slimes is a current challenge to the by-product recovery field. Up to this time no method has been found to recapture the P_2O_5 from slimes or to dispose of them compactly.

Another field for research and development in the mining phases of the industry is what the technicians call "beneficiation techniques" or in terms of the man in the street, getting the last drop out of the rock itself.

This problem is one affecting the basic reserves of phosphatic materials since in the western industry attention is now concentrated in the mining of only the better shales averaging 24% P_2O_5 with subsequent loss of the potential of the low grade phosphatic strata.

In the developing maturity of the fertilizer industry the bureau in the report notes the new methods in shales in which there are added the three major plant food ingredients other elements necessary to plant life such as calcium, magnesium, sulphur, iron, copper, manganese, zinc and boron. The bureau says in part that "the use of these secondary and minor plant-food elements will become increasingly important as agriculture depends more and more on fertilizers and the need for these elements is better recognized."

The bureau calls especial attention to the development of phosphate rock deposits on public land, particularly in the West. It says that any changes which may be contemplated must be considered in the interest of conservation and utilization of this valuable national asset.

KENTUCKY ORCHARD INCOME

FRANKFORT, KY.—Kentucky orchards produced $933,000 worth of apples and $912,000 worth of peaches during the past year.

CIPPERLY

(Continued from page 1)

attempt to analyze the use of ilizer cropwise by states on the is of material published by USDA, ch makes no distinction between two groups to which Mr. Paarl- refers.

This year, the 13 southern states, cluding the border states of Ken- cky and Tennessee, cultivated ap- oximately 250 million acres of nd. These states used an esti- ated 827,589 tons of N, 909,026 ns of P_2O_5 and 761,985 tons of O. That use of plant food repre- nted about 43% of the national tal.

The latest available USDA data fertilizer use by crops and on the lysis of crop production potentials relation to the use of fertilizer, s issued last December and is based 1950 and 1951 statistics.

This USDA report shows that the ire cotton crop is fertilized only at % of planted acreage, which hard- reflects a level of use in line with nomic values. The bulk figure may, wever, present a somewhat dis- ted picture.

Using the USDA analysis of in- vidual plant nutrients by the ajor southern cotton states, it ay be seen that the maximum oduction potential is far from ing attained but, of course, such eal goals are generally not ob- inable.

The use curve may be charted to w a sharply rising line of greater oduction leveling off at some peak, such optimistic graphs do not vince the practical critic who un- stands that the cut off point for st farmers for one reason or an- er comes at some point in the ve below the optimum (barring stimulation of price support or compulsion of a war economy).

Of the heavy cotton producing tes of the old South — Virginia, rth Carolina, South Carolina, orgia, Alabama, Mississippi and isiana—the highest general level use of N is shown by North Caro- a, which reports its use on all ms. Of the other states in this up, Louisiana has the lowest gen- l N use level, with 76% of planted es.

Average use of N varies for this up from a maximum of 40 lb. an e in Virginia to as little as 19 lb. acre in North Carolina and 16 lb. acre in Louisiana.

Opportunity for increased yields r acre for cotton through in- eased application of N reveals me highly graphic opportunities. r example, in Virginia, with an timated current use of N at 40 per acre, an increased use of N 100 lb. per acre would boost elds per acre by nearly eight unds.

Alabama with a current use rate of lb. N per acre, could step up out- n by approximately ten pounds acre by increasing use of N to lb. per acre.

Similar data for these same states arding the use of phosphoric ma- ials is also revealed. Following ditional use of plant foods, all se states use this material in ut the same proportion as noted ve for N. But in increasing the of P_2O_5 per acre, the improvement crop yields varies widely.

n South Carolina, with a use rate this product now estimated at 48 per acre, an increase of output of lb. would result from the applica- of 100 lb. of P_2O_5 per acre. That most dramatic increase in out- through heavier use of P_2O_5 of group of states.

ncreases in cotton output in South olina are indicated from compari- of its current use rate of K_2O 7 lb. per acre to 50 lb., which would increase cotton yield per acre by five pounds.

Shifting from cotton—a crop now seen in transition and being replaced in many sections of the old cotton south by pasture and cover crops—government economists see a bright future for southern agriculture.

The use of plant foods on pasture and cover crops seems sadly neglected by comparison with the older crops grown in those states. Generally speaking, all states use some small tonnage of plant foods ranging from 3,747 tons in Georgia, 4,940 tons in Alabama and down as low as 240 tons in Louisiana for nitrogenous materials.

Phosphoric materials are in more general use in pasture and cover crops in these same states. Usage of P_2O_5 runs as follows in pounds per acre: Virginia 12, North Carolina 19, South Carolina 28, Georgia 14, Alabama 15, Mississippi 8 and Louisiana 3.

Potash use on pasture and cover crops also varies widely. Average use varies from 15 lb. an acre in the Carolinas to lower and scattered quantities in the other states.

In pasture and cover crops, USDA reports some indicated dramatic increases in pasture availability through increased use of fertilizer materials, particularly P_2O_5 and potash.

In commenting on its data, USDA notes that it is generally assumed that with declining farm prices as now indicated there would be some decline in the use of plant food materials. But USDA adds a pertinent caution in this respect. It says that more recent data on crop response to new levels of fertilization with introduction of higher analysis materials indicates that the average per unit cost of plant nutrients will decline also.

From a rather narrow sampling of some of the major southern crops it may be seen that even the top echelon of the two million farms producing 88% of farm output may be functioning at something less than maximum efficiency.

Defoliation Urged In Cotton Belt

MEMPHIS, TENN.—Cotton's rank growth in most parts of the Cotton Belt is spurring many farmers to get ready for chemical defoliation. Record moisture and other conditions favoring plant growth have produced luxuriant foliage, abundant food for insects, and serious problems for mechanical cotton pickers. Rot threatens bolls, too, since air and sunlight cannot penetrate densely matted leaves and stems.

While recommending chemical defoliation where needed, the National Cotton Council has urged farmers to use extreme care in timing. Local agricultural authorities in the area should always be checked for defoliant recommendations, and for timing advice, the council says.

From 50 to 75% of the bolls should be open before applying defoliants and fields should be closely examined and every precaution taken not to cause plants to shed leaves before bolls are mature. Otherwise, fiber quality will be affected.

Where desiccation is to be used (desiccation is the practice of rapidly drying or "freezing" leaves and other plant parts by chemical action), the council urges growers not to apply chemicals until all, or at least 80%, of the bolls are open.

Nitrogen Essential, Washington State Experiments Show

PULLMAN, WASH.—Experiments conducted in the Columbia Basin project area and experience of farmers show that the application of nitrogenous fertilizers is a must for almost all crops, a report just published by Washington State College Institute of Agricultural Science says.

"Established Cash Costs and Man Labor Requirements for the Production of Principal Crops in the Columbia Basin Project," is the title of a new WSC experiment station circular prepared with the cooperation of the Bureau of Reclamation.

Purpose of the study, a foreword points out, was to determine the payment capacity of project lands with the aim of equitably allocating the irrigation charges to them. The circular was prepared by P. M. McMains, E. R. Franklin and J. E. Jensen.

"The amount (of nitrogen fertilizer) per acre will vary with the demands of the crop, but it matters little whether ammonium sulfate, ammonium nitrate or NH_3 is used," the economists said. "The cost per pound of available nitrogen is the important consideration.

"Some growers apply a mixed fertilizer containing nitrogenous and phosphorus compounds, particularly on potatoes and onions. Phosphorus carries over from one year to another, so if reasonable applications are made to a crop in one year it need not be applied on that land the next," the report states.

The report shows per acre costs to vary from $48.35 to $53.75 per acre for wheat and other small grains to as high as $259.90 to $340.91 for onions dependent on the soil type. (Cash costs of materials and labor costs are included. Taxes, interest and depreciation of machinery and buildings are not.)

Fertilizer costs in the study were constant for each crop since recommended fertilizer application rates were used as a criteria for all soil types.

Using prices existing in the spring of this year costs were listed as follows: Alfalfa hay, 100 lb. 44% P_2O_5, $4 an acre; dry beans, 125 lb. NH_3, $12.38; field corn, 150 lb. NH_3 $14.25; onions, 600 lb. mixed, $28.50; potatoes, 100 lb. NH_3 and 300 lb. 16-20, $22.10; seed peas, 200 lb. 16-20, $8.40; sweet corn, 150 lb. NH_3, $14.25; wheat, 90 lb. N, $13.50.

Top Dressing Means More Hay Per Acre

A Wisconsin agronomist reports that farmers can harvest an extra ton of hay per acre each year by topdressing their alfalfa with phosphate-potash fertilizer.

C. J. Chapman, University of Wisconsin soils specialist, cites the results from one Wisconsin farm, where top-dressed fields yielded 6,200 lb. more hay per acre than unfertilized fields during a three-year period.

The high-yielding hay fields were topdressed with 550 lb. per acre of an 0-20-20 fertilizer which contained boron.

Dr. Chapman says that on most Wisconsin hay fields, 300 to 500 lb. of a high potash fertilizer such as 0-10-30 is advisable. If there is a boron deficiency, fertilizer containing boron is available in this grade.

Alfalfa fields can be top-dressed this fall, Dr. Chapman says. The fertilized plants will store up added nutrients in their roots. This will put them in better shape to withstand winter heaving and will speed the alfalfa growth early next spring.

BUNNY JUMPS TO CONCLUSION

GRAND FORKS, N.D.—As though power lines, trees and the law of gravity do not present enough hazards to the agricultural pilot, Leo Mondry has added the agile jackrabbit to his list of flying boogies. While spraying a field and flying some five feet above the ground, Mr. Mondry's propeller and spraying apparatus were damaged by a high-leaping jackrabbit who tried a bunny version of Don Quixote to stop the plane. Although the rabbit never lived to know it, his efforts were successful, for the pilot had to make a forced landing in a nearby field. Slightly damaged were parts of the plane, but the rabbit was a total wreck.

CIPC Plus Cultural Practices Said to Control Dodder Weed

LOGAN, UTAH—Use of the herbicide, CIPC, plus the cultural practice of burning over stubble, offer promise as methods of controlling dodder in alfalfa fields of the arid West, the U.S. Department of Agriculture reports.

Although results are too preliminary to serve as a basis for recommendations to alfalfa-seed producers, cooperative USDA-State research at Logan, is showing that seed production can be increased by either:

(A) applying pre-emergence sprays of CIPC (just before dodder seeds have germinated), or

(B) burning over dodder-infested fields with a weed burner after the first alfalfa seed crop has been harvested.

Agronomists F. L. Timmons and W. O. Lee of USDA's Agricultural Research Service, working in cooperation with the Utah Agricultural Experiment Station, say that weather conditions and timing of spray applications have proved to be important factors in effective use of CIPC, and that stubble burning sometimes has a detrimental effect on alfalfa-seed yields. These problems are currently getting the researchers' attention.

Experiments have shown that preemergence treatments with CIPC just as alfalfa begins to grow in the spring delays dodder germination about a month. Such treatment results in less dodder seed to serve as a source of re-infestation, plus a better alfalfa seed crop. However, timing the treatment as little as 10 days earlier (in late February at Logan) caused only a slight delay in dodder-seed germination — giving alfalfa time to grow just enough to make it a good host for the weed.

DU PONT DIVIDEND

WILMINGTON—Directors of the Du Pont Co. have declared a dividend of $1.50 per share on the common stock as the third quarterly interim dividend for 1955, payable Sept. 14 to stockholders of record Aug. 22. Dividends of $1.25 per share were paid in each of the first and second quarters. The regular quarterly dividends of $1.12½ per share on the preferred stock — $4.50 series — and 87½¢ per share on the preferred stock—$3.50 series—also were declared, both payable Oct. 25, 1955, to stockholders of record Oct. 10, 1955.

OUTBREAK POSSIBLE

BLACKSBURG, VA. — A heavy outbreak of potato tuberworms is "definitely possible" in Virginia this fall, warns Arthur P. Morris, associate entomologist at Virginia Polytechnic Institute.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

Trial Balloons Ascending

Two or three months ago, many in the trade either heard or read about statements made at the National Plant Food Institute meeting by Rep. Harold D. Cooley, chairman of the house committee on agriculture, to the effect that "now is the time to worry" (about farm prosperity) that "Bankruptcy may be just around the corner," and that were it not for the rigid support farm program, "American agriculture would produce itself into complete bankruptcy within one crop year . . ."

More recently, the nation has heard a completely opposite viewpoint expressed by Don Paarlberg, assistant to the Secretary of Agriculture (Croplife, Aug. 22, page 1), who argues that there are numerous significant factors involved in figuring whether or not the farmers are in an economic pinch of serious proportions.

Obviously, there are bound to be sincere followers of both philosophies and we can see where vehement arguments are bound to develop along the lines of these two viewpoints.

A veritable bombardment of facts, half-facts, propaganda and political oratory is beginning to reverberate around the country in increasing tempo as the 1956 political campaigning gets under way. And our prediction is that the farm issue will be the one for which politicians will reserve their choicest oratory.

It is time for people who trade with farmers to begin building up a stockpile of verbal ammunition to throw into arguments that are bound to develop as election time comes closer into view.

On the one side, we have the viewpoint expressed by Mr. Cooley, who sees a sinister plot developing, "a deliberate and vicious effort being made to cause consumers to rise up and revolt against the farmers of our nation." Farmers are a discouraged lot, he said, "and are waging a desperate fight trying to sustain their incomes and save their farms.

"Farm incomes are decreasing and farm debts are increasing. Our farm program is in danger and the economy of our country is in peril . . . agriculture is in desperate straits and fighting a desperate fight while the rest of the country is riding high, wide and handsome. . . ."

Not so, counters Mr. Paarlberg. Although farm income is down close to 30% since the immediate post war years, we must not forget that the war and post war years were the best ones farmers ever experienced . . . there was not the degree of competition for the consumers' dollar that now exists in the form of television sets, automobiles and housing. Nor did the farmer's expenses reflect, at that time, the full impact of inflation. They were years of good yields, high prices and low costs, an unusual combination that never occurred previously, to a like degree, and may never occur again.

Mr. Paarlberg's explanation goes on further. "There was a time during the war and post war period when many farms were bought and paid for in a fraction of the time it usually takes. These were years, out in the Great Plains, when the value of a single crop exceeded the sales price of the land on which it was grown. This was a dream world, and no one expected it to last.

"Congress did not expect it to last; legislation was passed to 'cushion the shock of readjustment.' Professional economists did not expect it to last; they warned farmers that the recent past was not the new normal. The trade did not expect it to last; for long periods of time prices on the futures markets were low relative to cash prices. Farmers did not expect it to last; they were conservative about land values. They avoided speculation. They paid off debts and accumulated savings.

"The point I am making is that the war and post war years were not normal years, they were the best years we ever had.

"Few things look good when compared with the best you ever had.

". . . We must be careful lest we think we are in a depression just because someone chose an abnormal period of years as the basis for comparison, counted only part of the dollars and forgot to count the farmers among whom the dollars are divided. To some degree, the alleged agricultural depression is a statistical depression.

". . . There are those who say that with modern production methods, the relative per bushel or per pound cost of production has been reduced sufficiently so that it is possible to make money with a less favorable price relationship that formerly prevailed. Certainly this is true for poultry products, for potatoes, and for food and feed grains.

"Present price relationships for agriculture are about midway between the post war boom and the depression of the '30's. They certainly are not as favorable as farmers and the Department of Agriculture would like to have them. But neither are they as disastrous as painted by some. There is evidence that they may be somewhere near normal for modern day periods of peace time full employment."

Mr. Paarlberg pointed to a misleading aspect of the "average farm income" figure, which is often used to show that farmers are not getting a fair share of the national income. In 1954, for instance, per capita incomes of farmers totaled $918, as compared with $1,836 per capita for non-farmers.

"That is the truth, but it is not the whole truth," Mr. Paarlberg says.

"About 88% of our farm products are produced by the 2 million farmers who are on units large enough to be considered commercial farms. The other 3½ million farms, more than half the total, produce only 12% of the food and fiber which goes to market. These units are so small and produce so little that their incomes from farming are always low, good times or bad.

"Average farm income, as customarily quoted, throws these two unlike groups together—commercial farmers, many of whom have incomes comparable with incomes of urban people with similar ability and capital; and small operators whose incomes are abysmally low. The large numbers of farmers with low incomes pull the average figure down to a low level and make an over-all unfavorable comparison with urban income. An average of these two unlike groups has some meaning, it is true. But like an average of my income and that of John D. Rockefeller, it doesn't correctly describe either of the components.

"If the per capita incomes of commercial farmers and small operators were reported separately, then we would be able to make more meaningful comparisons. And we would see more clearly the need for designing different farm programs for the differing circumstances of these two farm groups."

It will be along these two lines that the 1956 political battle front will be established. Upon the acceptance or rejection of either viewpoint the results of the election may depend. Dealers are in a position of influence in these matters, and they should keep well informed as to the issues, and try constantly to separate the facts from the propaganda.

Quote

"A farmer is a businessman. His business is subject to a number of hazards over which he has little control. Consequently, he is usually a cautious or even pessimistic individual when it comes to planning his operations. Quite often this attitude carries over into the matter of fertilizer expenditures. He may well think he is 'playing it safe' by cutting his fertilizer expenditures below amounts recommended by college authorities or used by the more successful farmers. Actually he is not 'playing it safe' at all by cutting his fertilizer expenditures. In most cases he is simply eliminating some of his prospective profit."—W. R. Allstetter, vice president, The National Fertilizer Association, Washington, D.C.

CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at $5 for one year, $9 for two years ($8 a year outside the U.S. and possessions). Single copy price, 25¢.

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Published by
The Miller Publishing Co.
2501 Wayzata Blvd.
Minneapolis, Minn.
(Address Mail to P.O. Box 67, Minneapolis 1, Minn.)

Associated Publications
THE NORTHWESTERN MILLER
THE AMERICAN BAKER
FEEDSTUFFS
MILLING PRODUCTION

udy Shows Soil rtility Differences New Mexico

STATE COLLEGE, N.M. — Great ferences in soil fertility in New xico have been turned up in re-rch work by Dr. H. E. Dregne, w Mexico A&M agronomist, and J. Maker, soil scientist with the l Conservation Service.

The researchers have analyzed sev-l thousand soil samples collected New Mexico for pH, soluble salts, ganic matter, available phosphate, changeable potassium and lime.

The analyses show that most of the igated soils are alkaline, particu-ly in the Rio Grande Valley and na County. In only one area, in stern Catron County, are the soils d, and even there, the acidity is ght.

Soils with the highest average in ganic matter content are found in mountainous counties, except for naves and Union counties. The west organic matter levels are und in the eastern and southwestern unties where higher temperatures ntribute to a more rapid oxidation organic matter. The relation be-een organic matter and other soil aracteristics is varied.

The amounts of available phos-hate in the surface soils vary in he different sections of the state. Eastern New Mexico soils have the owest average values; the highest verages are found in the south-western corner of the state, and he soils in Lincoln County and north central New Mexico are also high in available phosphate.

Exchangeable potassium levels are quite high in most counties. Mora County has the lowest level, and nine counties have intermediate levels.

Most surface soils in the irrigated areas of the state contain some free lime. The largest amounts are found in soils of the Pecos Valley, the Tularosa Basin and the Sacramento Mountain valleys.

Excessive salt may be a problem in the Pecos Valley, the Tularosa Basin, the Rio Grande Valley and the San Juan Valley. The average salt levels in many counties are low, but most irrigated areas of New Mexico have potential problems with salt accumulations. Wherever poor drainage occurs, salt is a hazard.

Controlled field tests are in progress to relate soil test results to fertilizer response and to evaluate the differences found in this experimental work.

MEETING MEMOS
See Page 19

Beetle Spraying Planned In Kentucky County

LOUISVILLE—A Japanese beetle spraying campaign has been planned for Jefferson County, Ky., with the Louisville, county and federal governments sharing the cost of $11,000.

PEAR PEST DISCOVERED

LAKEPORT, CAL.—One of the worst pests of pears has been discovered in an orchard ten miles from here by Rex Lyndall, Lake County agricultural commissioner. Pear psylla, found also to be in neighboring Mendocino County, has begun to infest several areas of northern California. Spray applications of malathion and parathion are being used to control spread of the insect in several areas.

Chase Bag Co. Makes Personnel Changes

CHICAGO—Changes in personnel of the Chase Bag Co. manufacturing division were recently announced by F. H. Ludington, Jr., vice president.

David C. Wyland has been appointed assistant superintendent of the Chase branch in St. Louis. A graduate of Washington University, he was previously associated with the firm's industrial engineering department.

Announcement was also made of the transfer of A. Wellford Garrett to the Chase Bag Co. branch in Crossett, Ark. Mr. Garrett, who also served with the firm's industrial engineering department, will act in a supervisory capacity in the manufacture of Chase multiwall paper bags.

A recent addition to the Chase industrial engineering department, also located in St. Louis, is Robert H. Biehl, who will assist in time study analysis, equipment surveys and related work. Mr. Biehl is a graduate in mechanical engineering of Tri-State College, Angola, Ind. He was previously associated with Eureka-Williams and the Walworth Valve Co.

New England Soil Group Studies Fertilization

WINDSOR, CONN. — Some 75 members and guests of the Southern New England chapter of the Soil Conservation Society of America, met here Aug. 8 and saw demonstrations of plowing, plant food placement and fertilization at different soil levels.

Dr. James G. Horsfall, director of the Connecticut Agricultural Experiment Station and members of the Station staff were speakers at the program.

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BUDGET CONTROL SUPERVISOR

ST. LOUIS—The appointment of Lloyd R. Cole of St. Louis to the position of supervisor of the newly-created budgetary control section of Monsanto Chemical Co.'s Accounting Department, was announced here recently by Irving C. Smith, controller. Mr. Cole, who has been assistant to the division controller of Monsanto's Inorganic Chemicals Division, will assume his new duties Sept. 1. At the same time, Mr. Smith announced that Gerald J. McKean Jr., also of St. Louis, will succeed Mr. Cole as assistant to the division controller.

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Working under the direction of Croplife's seasoned and experienced editors in the Minneapolis Home Office is the Advertiser Service Department, headed by a trained statistician and market research man who directs the work of a library and research staff of five persons.

Croplife's advertising sales staff includes full-time staff members in each branch office, with several years of experience in businesspaper advertising, whose first objective is to be of service to advertisers and agencies interested in the field served by Croplife. These representatives know agriculture thoroughly and their experience in industries and organizations serving the agricultural field qualifies them highly for their advertising sales and service assignments. Included in this wealth of experience are previous assignments with agricultural experiment stations, the United States Department of Agriculture and daily and weekly newspaper work in agricultural communities.

In the nation's capital, Croplife has its own Washington correspondent, a veteran capital newsman who interprets the Washington scene in terms of short and long range impact on the industry. In looking behind the government news releases he is able to report valuable information on trends and significant behind-the-scenes activities.

Croplife's foreign manager is alert to overseas developments of interest to the agricultural chemical industry and handles requests from advertisers and agencies for information and service on the foreign market.

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Close 14 Days Preceding

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